

Child Opportunity Index 2.0: Understanding the neighborhoods where children grow up



Photo credit: The Raising of America

diversitydatakids.org

data for a diverse and equitable future

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THE HELLER SCHOOL
FOR SOCIAL POLICY
AND MANAGEMENT
Institute for
Child, Youth and
Family Policy



THE OHIO STATE UNIVERSITY

KIRWAN INSTITUTE FOR THE
STUDY OF RACE AND ETHNICITY



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[Early Childhood](#)

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[Neighborhoods](#)

Black Children Matter.

Mobilizing data for equity

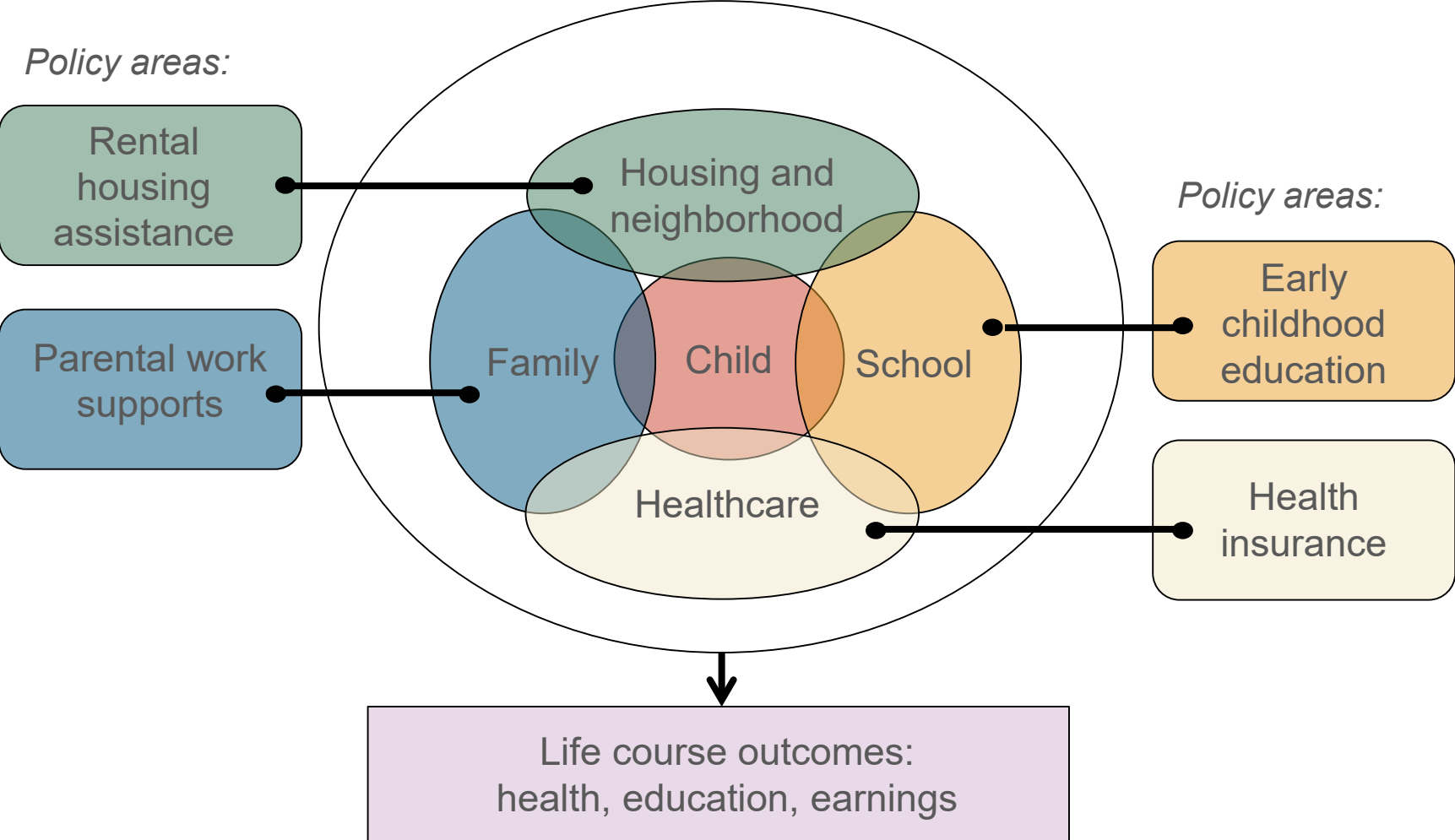
[Access raw datasets](#) [↗](#)

[Explore our research](#) [↗](#)

[Learn about racial patterns of child opportunity](#)

Funded by the W.K. Kellogg Foundation and the Robert Wood Johnson Foundation

Children develop in the multiple settings they travel through in their daily lives



Current focus of our work

Study how children's lives are shaped by the neighborhoods where they grow up

Describe, monitor, and communicate about inequalities that hurt children

Understand and support people using data to improve children's lives and advance equity (and share their stories)

Inform policy: health, early childhood care and education, and housing

Questions?

diversitydatakids.org/contact-us

Email us

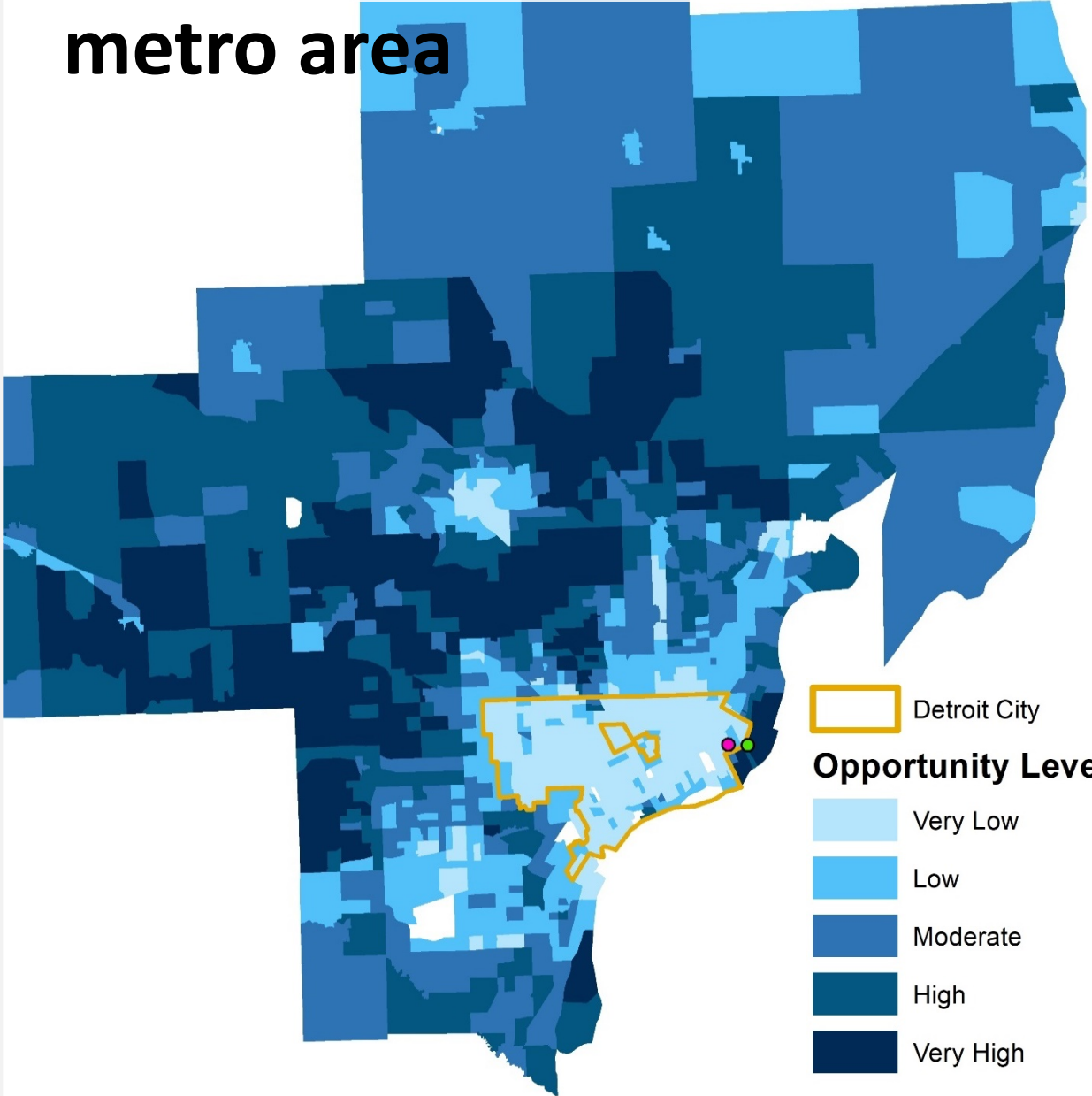
info@diversitydatakids.org



Two Detroit Neighborhoods

A few miles away, a world apart in child opportunity

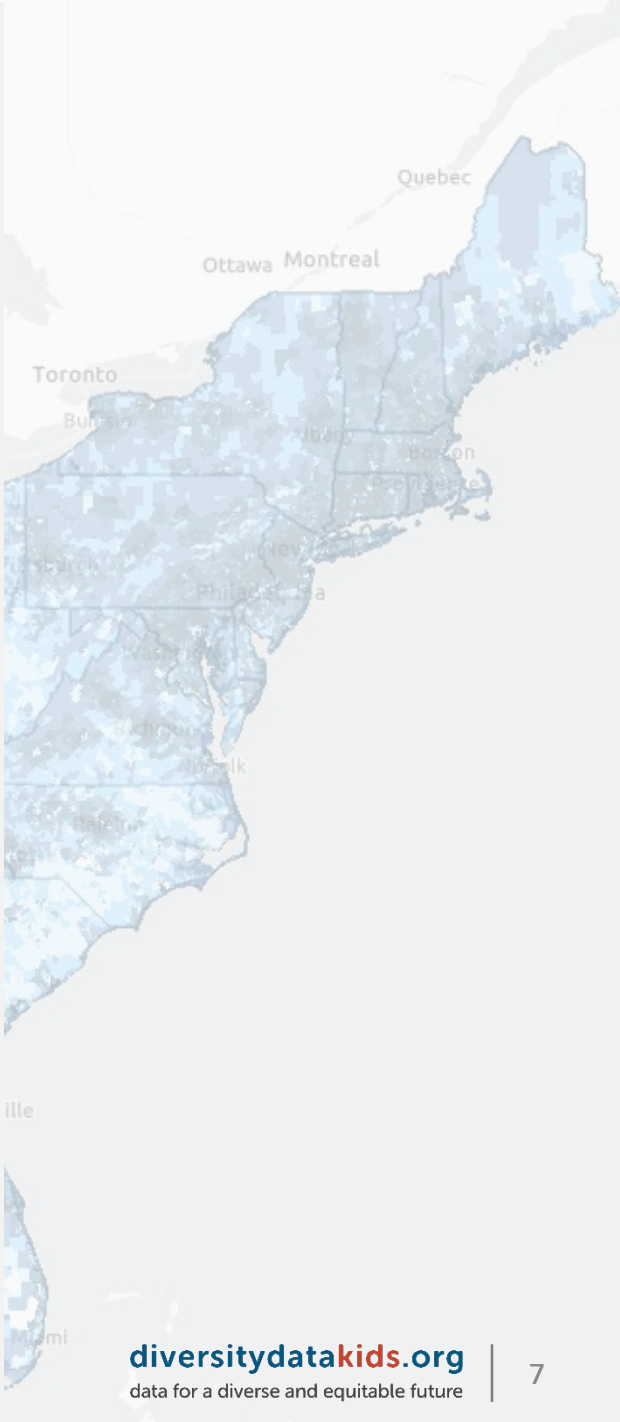
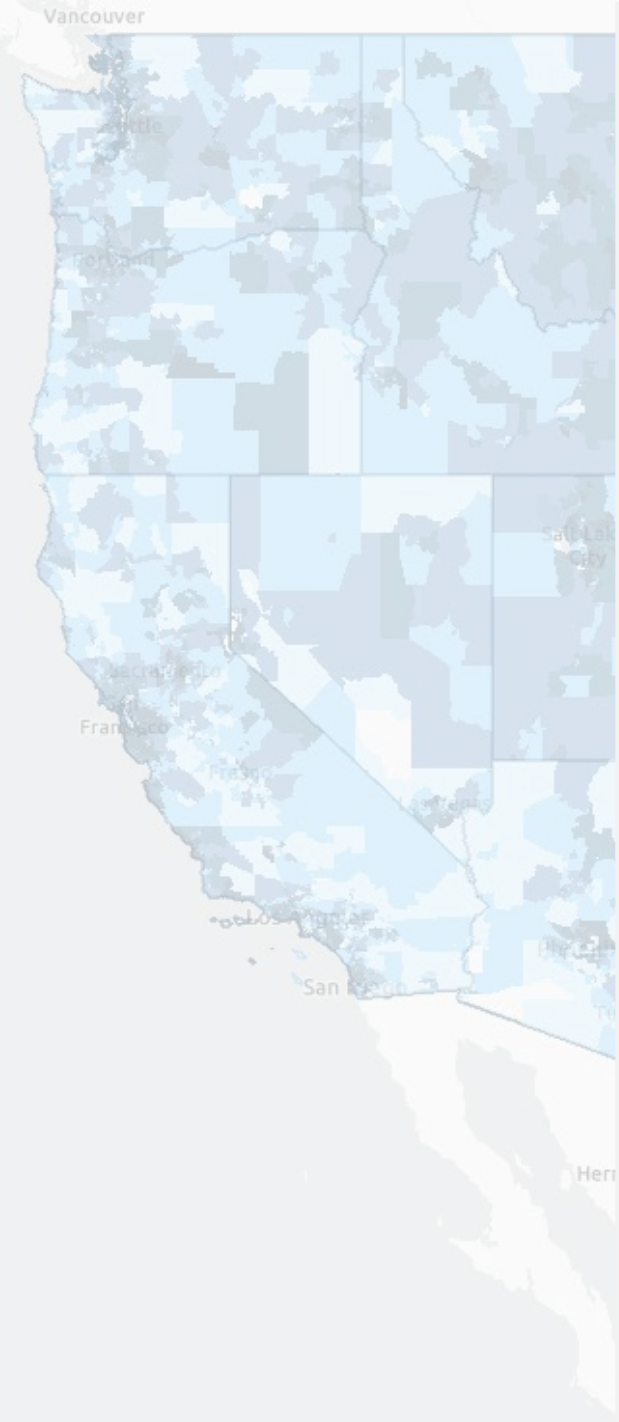
Detroit-Warren-Livonia metro area



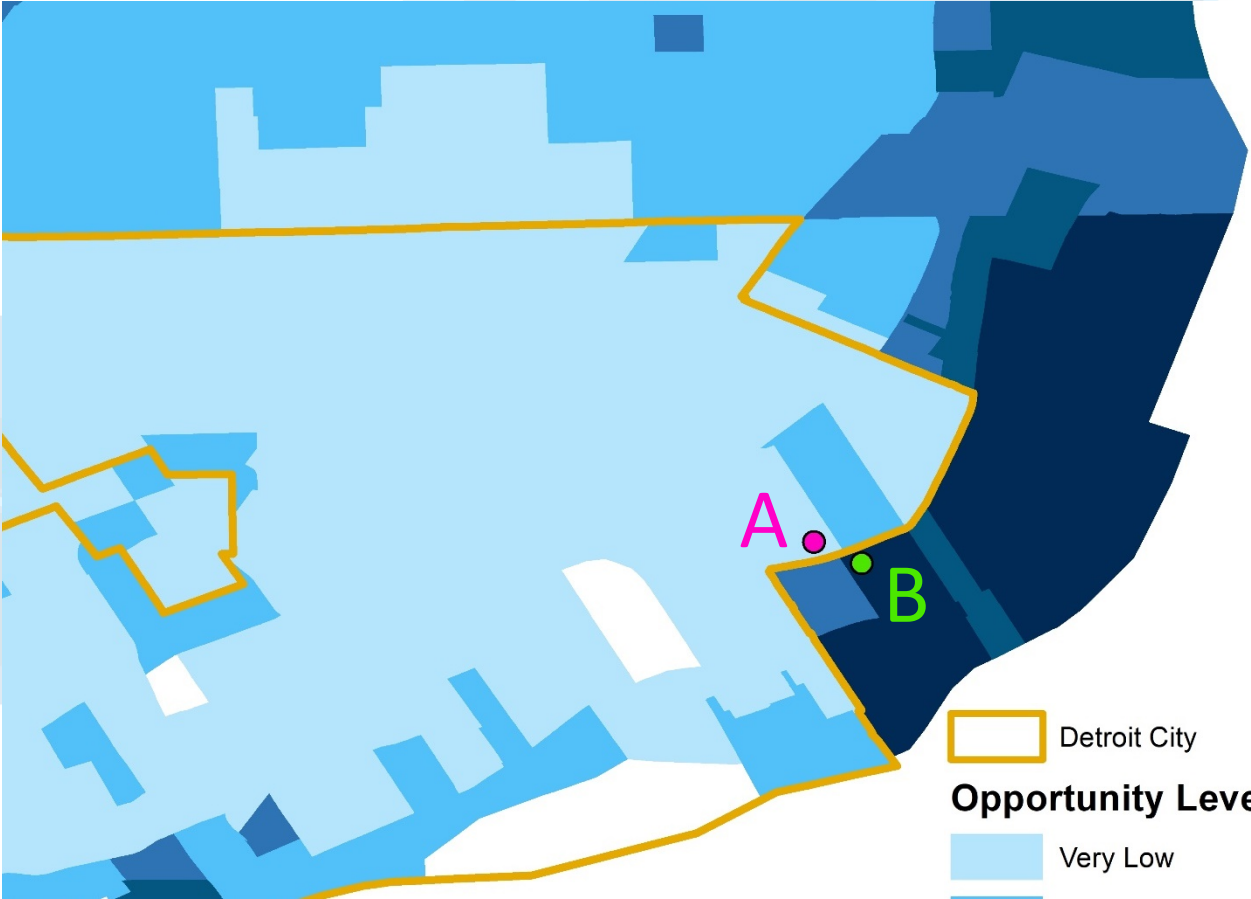
 Detroit City

Opportunity Levels

-  Very Low
-  Low
-  Moderate
-  High
-  Very High



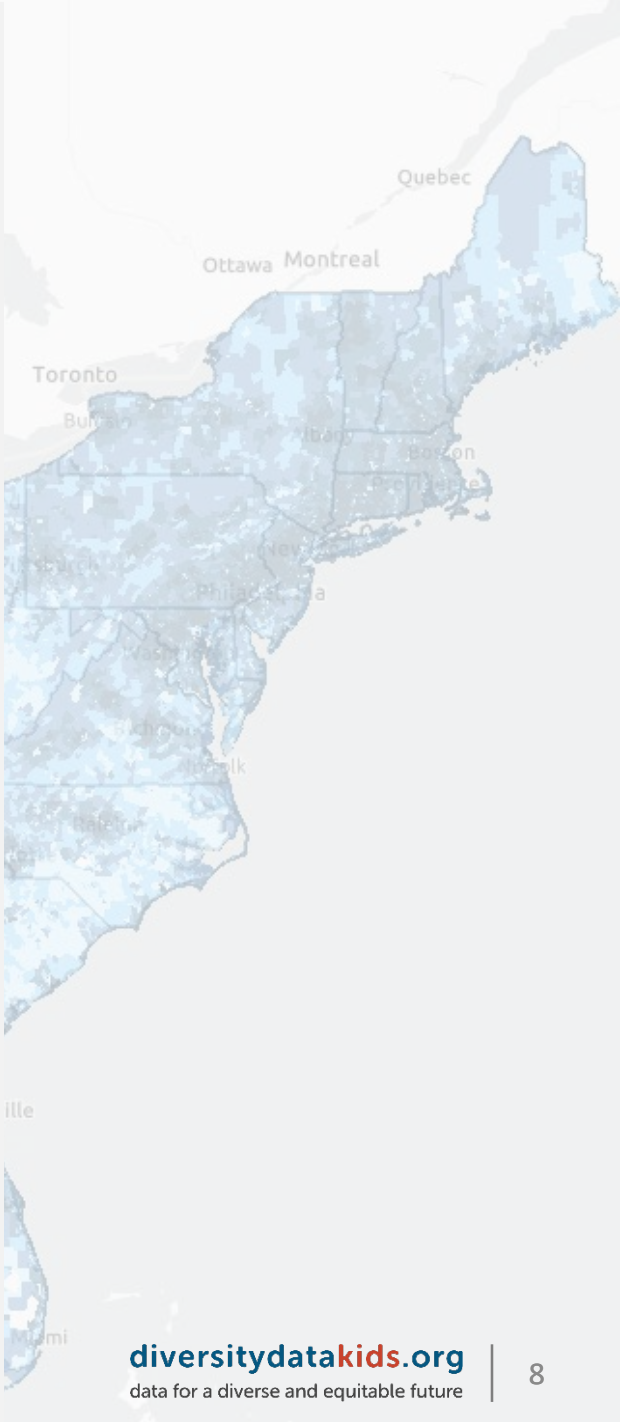
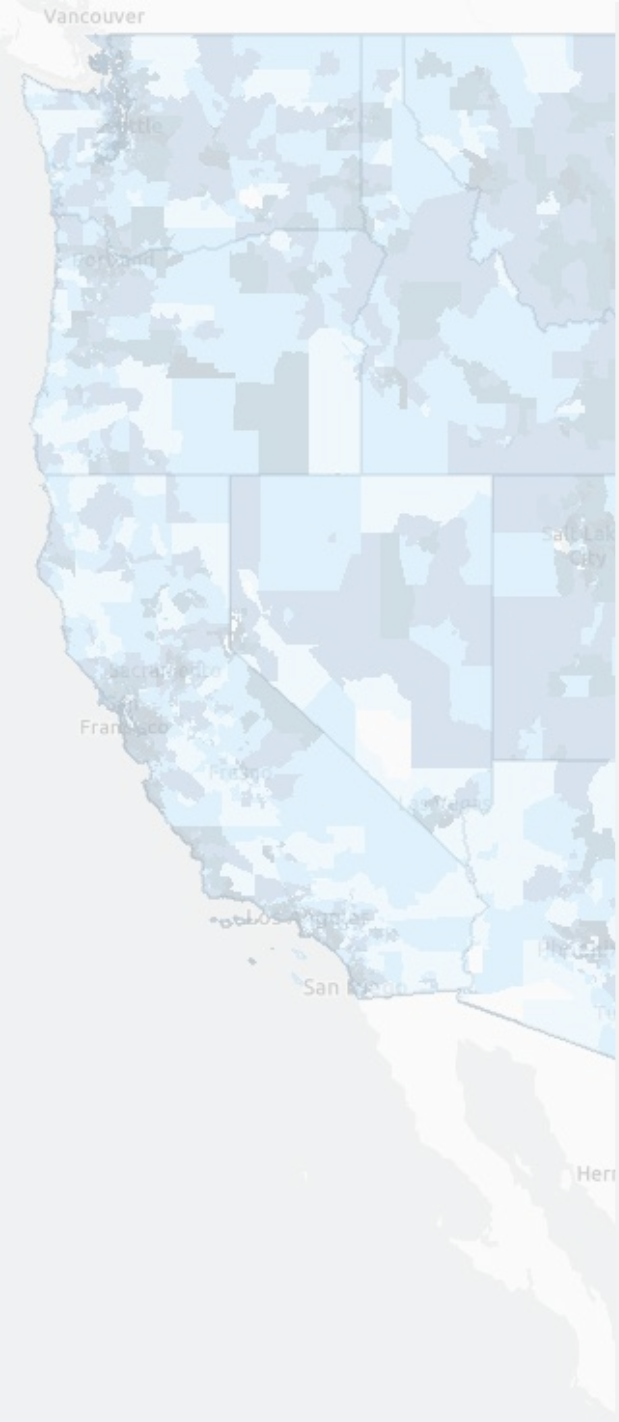
Detroit-Warren-Livonia metro area



 Detroit City

Opportunity Levels

-  Very Low
-  Low
-  Moderate
-  High
-  Very High





Selected COI 2.0 indicators

Neighborhood A

Neighborhood B

Neighborhood poverty rate

Enrollment in early childhood education

Lack of green space

Limited proximity to healthy food

Housing vacancy rate

52%

30%

60%

11%

28%

5%

52%

39%

0.2%

0.3%





Neighborhoods matter for children's healthy development

Neighborhoods influence children's health and education

Green space and
playgrounds

Early childhood education

Schools



Neighborhoods influence children's health and education

Air quality

Access to healthy food

Walkability

School quality



Neighborhoods influence children's norms and expectations for the future

High school graduation

College aspirations

Employment prospects



Neighborhoods influence children's long-term outcomes

Educational attainment

Adult income

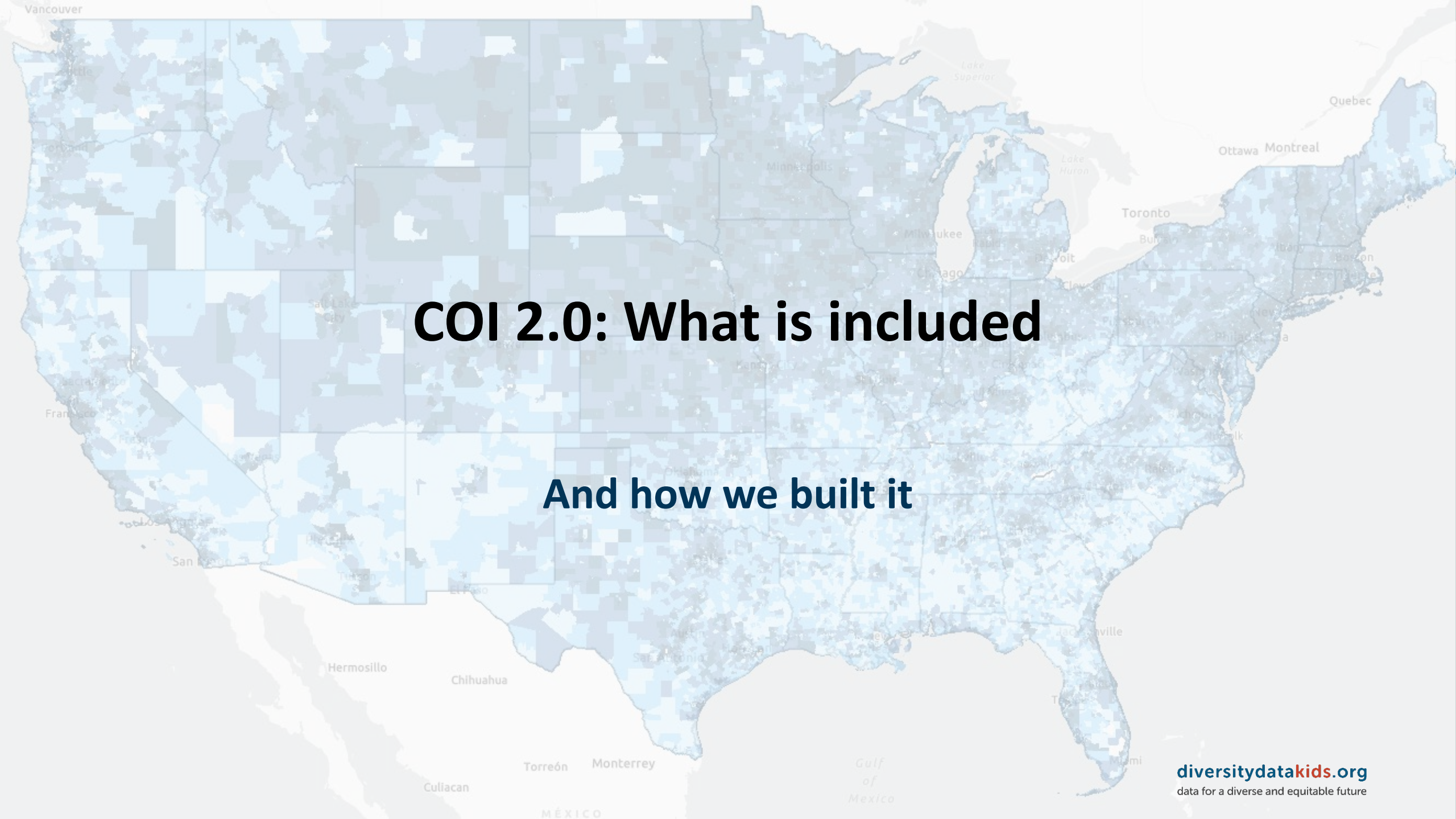
Adult health

Life expectancy



COI 2.0: A metric of child opportunity for all U.S. neighborhoods

- Multi-sectoral: 29 indicators capturing three domains of opportunity (education, health and environment, social and economic)
- Focus on neighborhood features that matter for children today
- Granular data on nearly all U.S. neighborhoods (72,000 census tracts)
- Data comparable across neighborhoods and over time (2010, 2015)
- Good predictive validity compared to similar metrics
- Users from academia, media, health, housing, and early childhood education sectors



COI 2.0: What is included

And how we built it

Education

Early childhood education (ECE)

ECE centers within five miles
High quality ECE centers within five miles
ECE enrollment

Primary school

Third grade reading proficiency
Third grade math proficiency

Secondary and post-secondary

High school graduation rates
AP enrollment
College access/enrollment

Resources

School poverty
Teacher experience
Adult educational attainment

Health and Environment

Healthy environments

Access to healthy food
Access to green space
Walkability
Housing vacancy rates

Toxic exposures

Superfund sites
Industrial pollutants
Microparticles
Ozone
Heat

Health care access

Health insurance coverage

Social and Economic

Economic opportunities

Employment rate
Commute duration

Economic resource index

Poverty rate, public assistance rate, high skill employment, median household income, home ownership

Family structure

Single parenthood

How we built the index

Indicators standardized (converted to z-scores) so that they are on a common scale

Standardized indicators averaged into three domain scores

Weights capture how strongly each indicator predicts four different health and socio-economic outcomes

Domain scores averaged into one overall score

Scores converted into two easily interpretable metrics

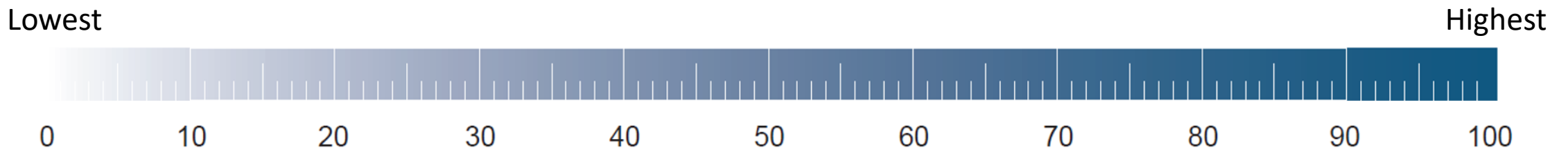
COI 2.0 metrics: Child Opportunity Scores

Child Opportunity Scores

Range from 1 to 100

To construct them,

we ranked all neighborhoods on domain and overall scores,
grouped neighborhoods into 100 groups containing 1% of the child
population each,
and assigned each group a score from 1 (lowest) to 100 (highest)



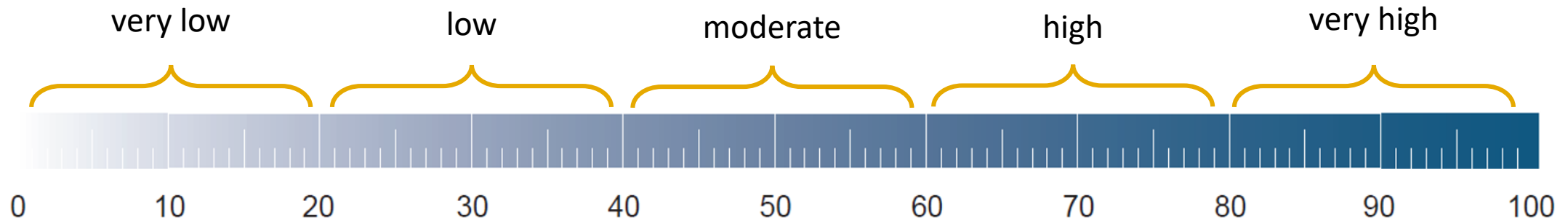
COI 2.0 metrics: Child Opportunity Levels

Child Opportunity Levels

5 categories: very low, low, moderate, high, very high

To construct them,

we ranked all neighborhoods on domain average or overall average z-scores and grouped neighborhoods into 5 categories containing 20% of the child population each



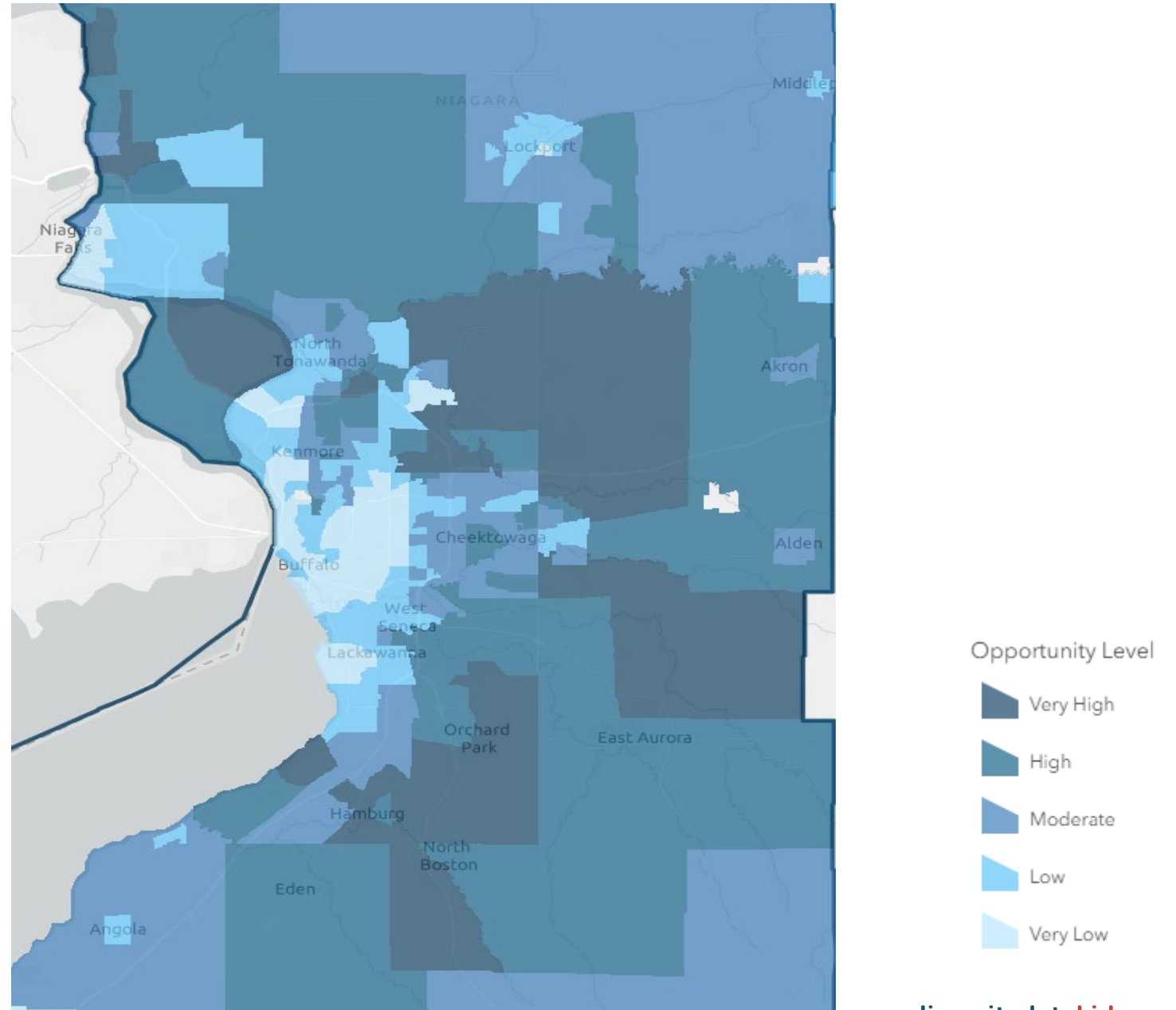


Exploring the Child Opportunity Index in New York State

More data stories at
diversitydatakids.org/child-opportunity-index

**BUFFALO-CHEEKTOWAGA-NIAGARA
FALLS METRO AREA**

Child Opportunity Levels



Source: diversitydatakids.org. Child Opportunity Index 2.0 Database.

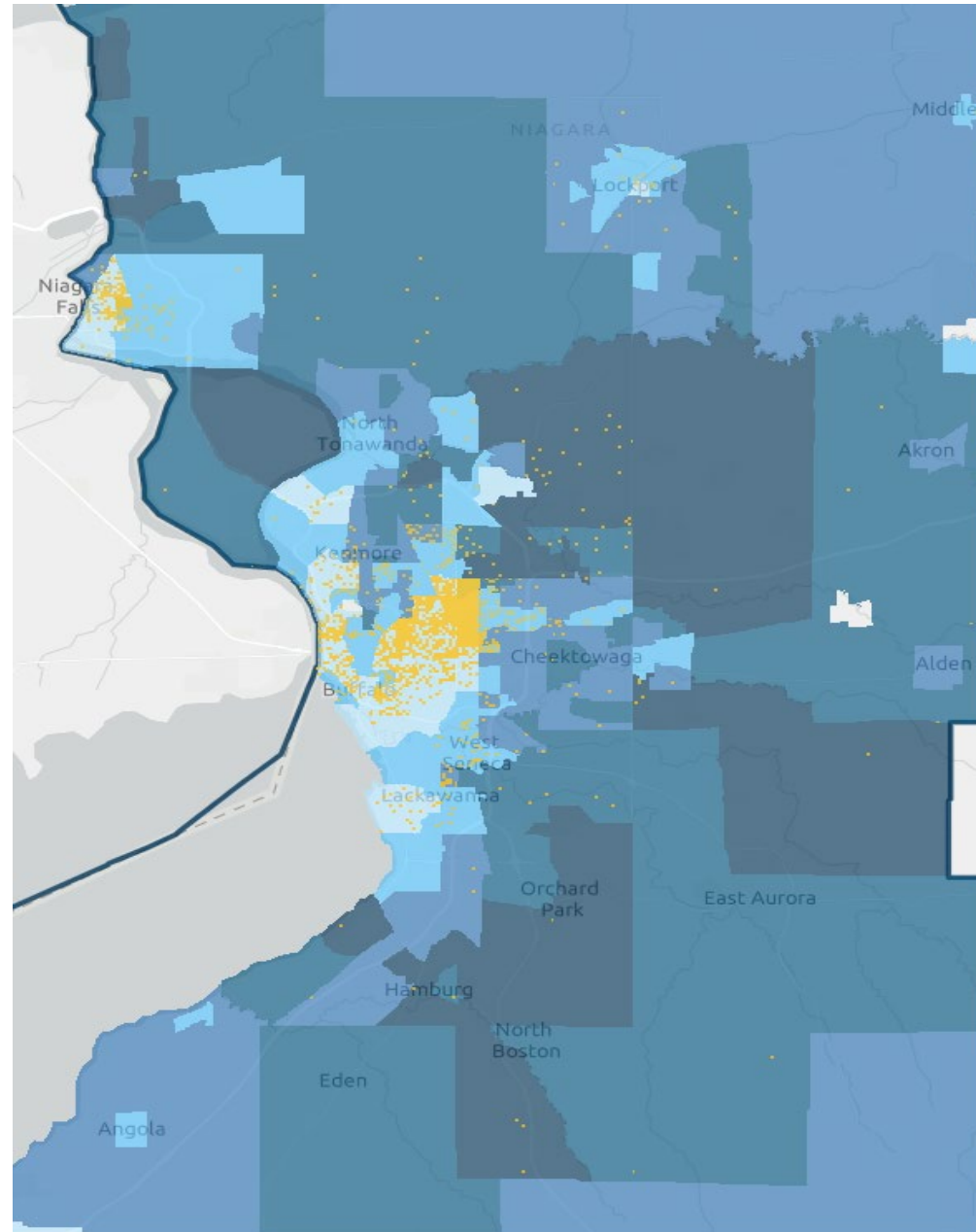
**BUFFALO-CHEEKTOWAGA-NIAGARA
FALLS METRO AREA**

Black children's access to neighborhood opportunity

Child Opportunity Levels

1 Dot = 20 children aged 0-17
years

Source: diversitydatakids.org. Child Opportunity Index
2.0 Database. Population data from American
Community Survey 5-Year Summary Files.



 Black or African-American

Opportunity Level

-  Very High
-  High
-  Moderate
-  Low
-  Very Low

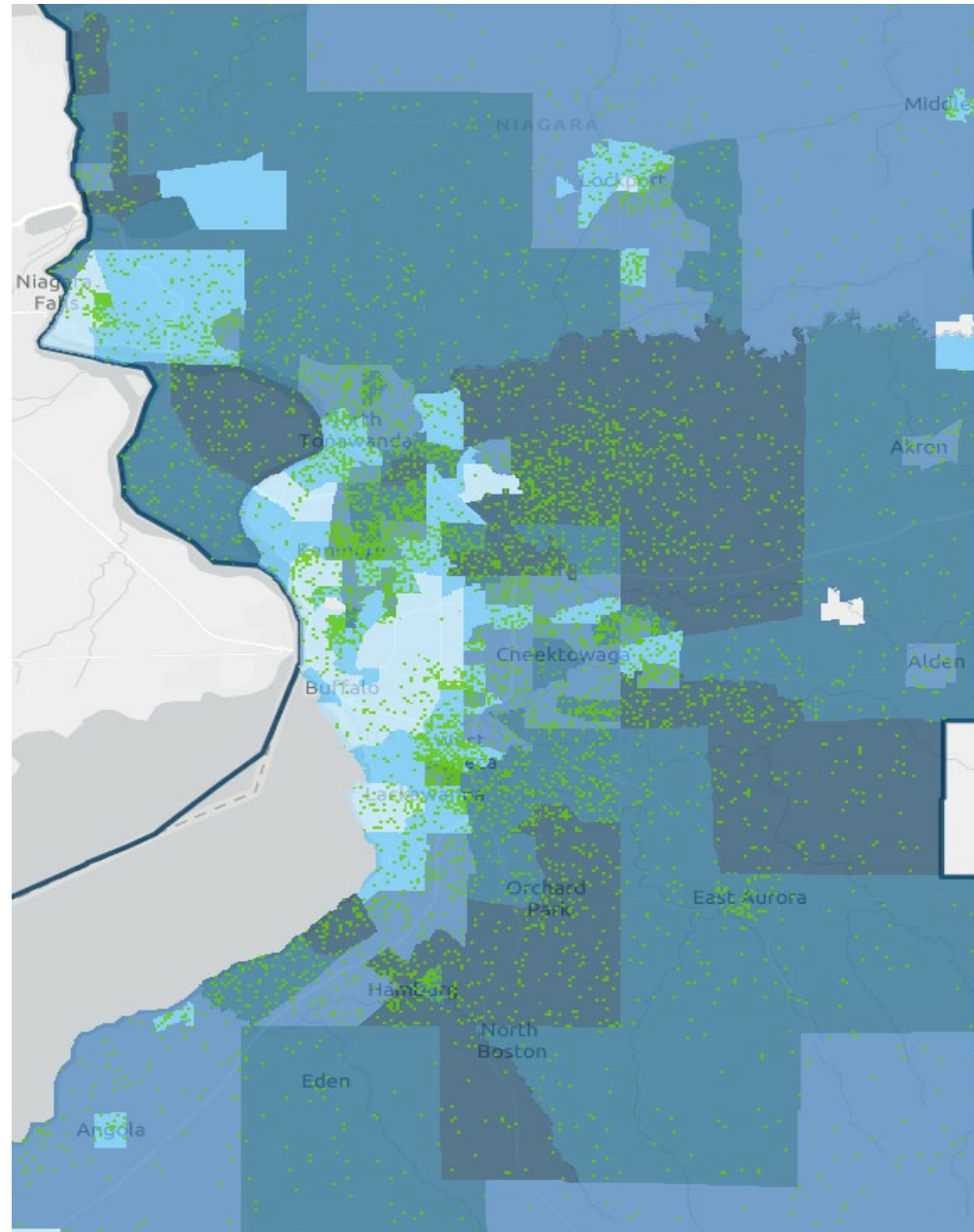
BUFFALO-CHEEKTOWAGA-NIAGARA FALLS METRO AREA

White children's access to neighborhood opportunity

Child Opportunity Levels

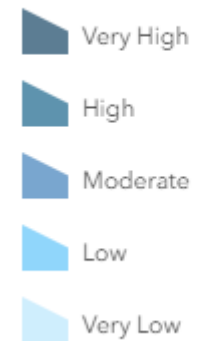
1 Dot = 20 children aged 0-17
years

Source: diversitydatakids.org. Child Opportunity Index
2.0 Database. Population data from American
Community Survey 5-Year Summary Files.



White (Non-Hispanic)

Opportunity Level

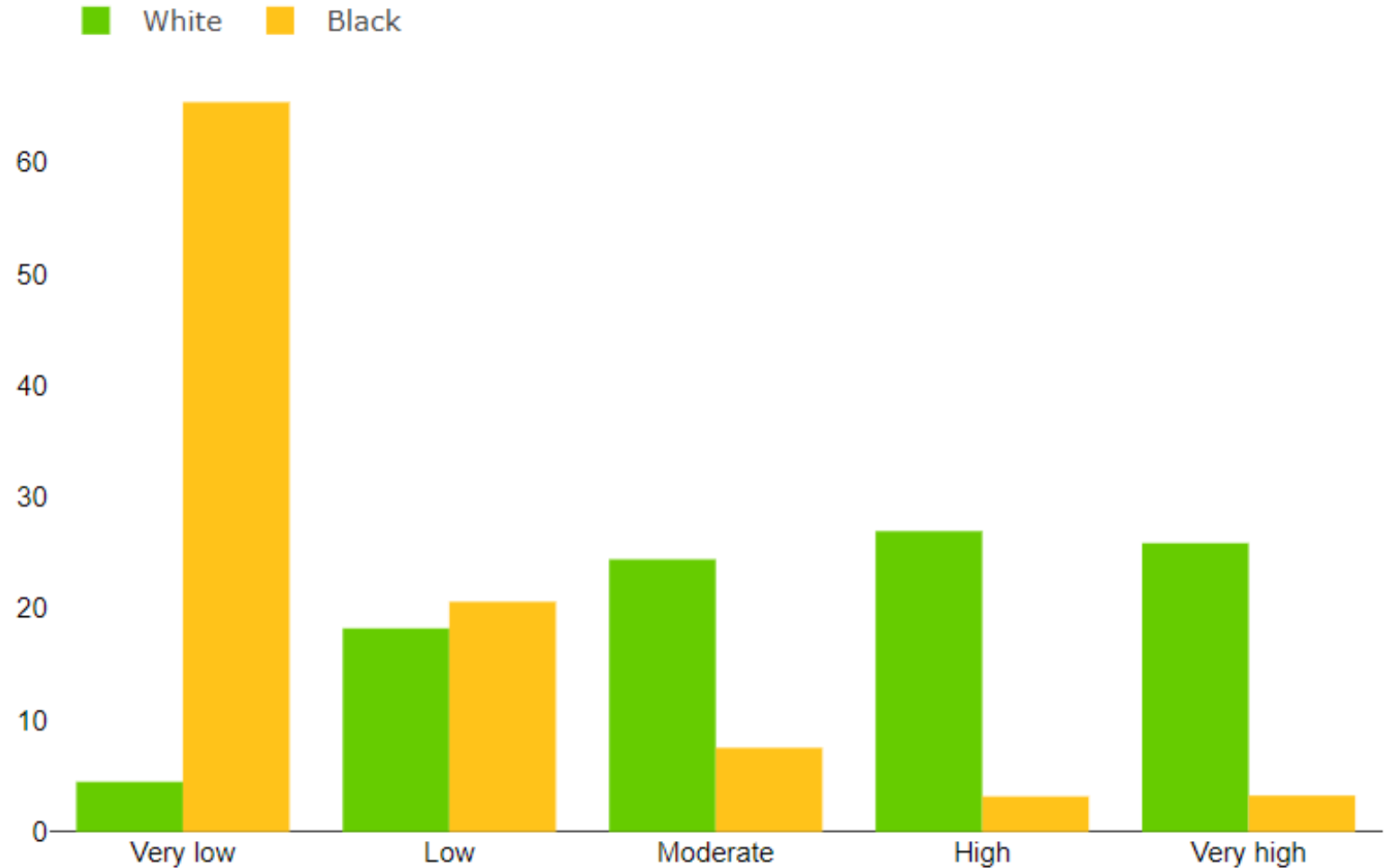


**BUFFALO-CHEEKTOWAGA-NIAGARA
FALLS METRO AREA**

Percent of children by Child Opportunity Level

Child Opportunity Levels

Children aged 0-17 years

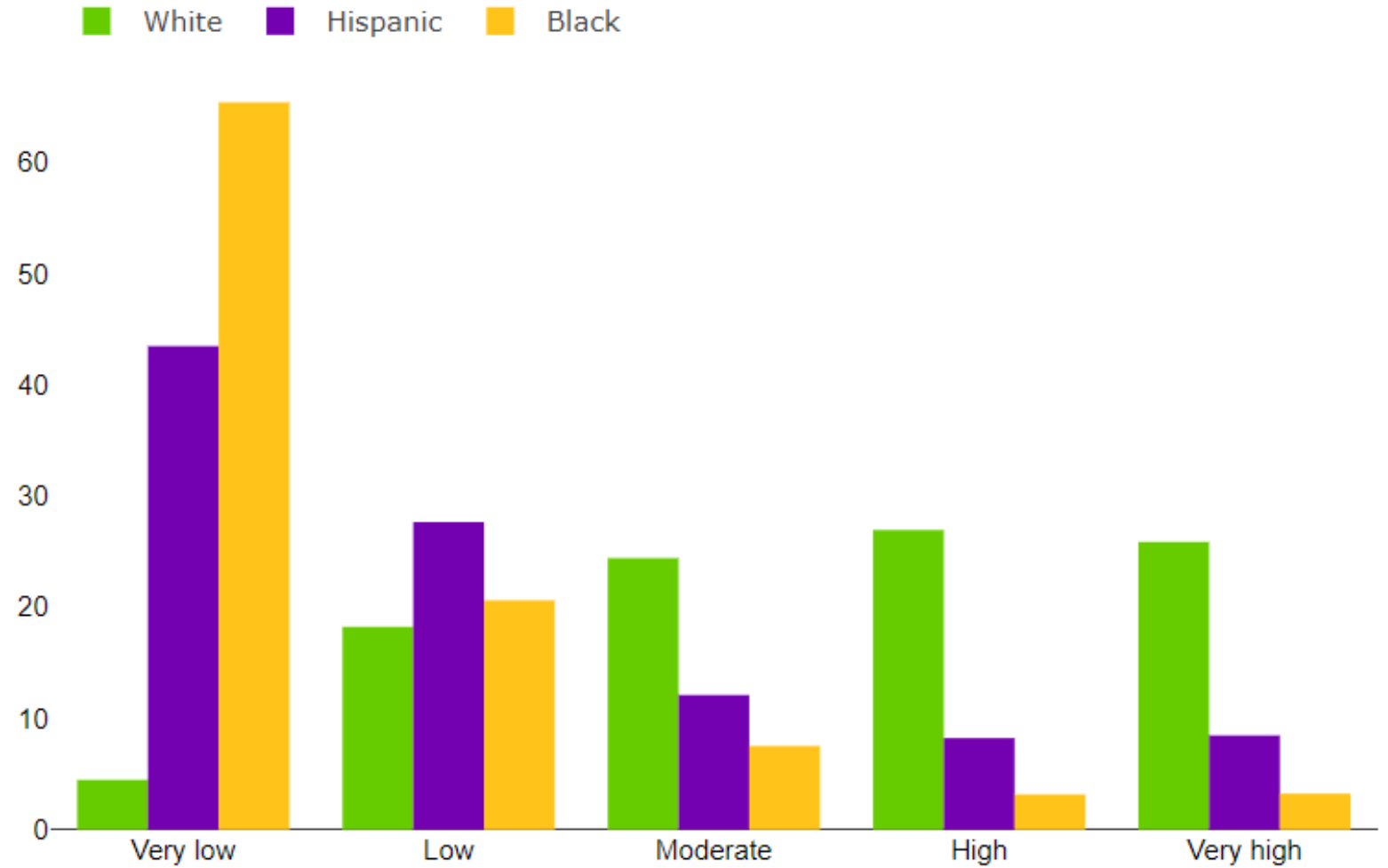


Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey 5-Year Summary Files.

Percent of children by Child Opportunity Level

Child Opportunity Levels

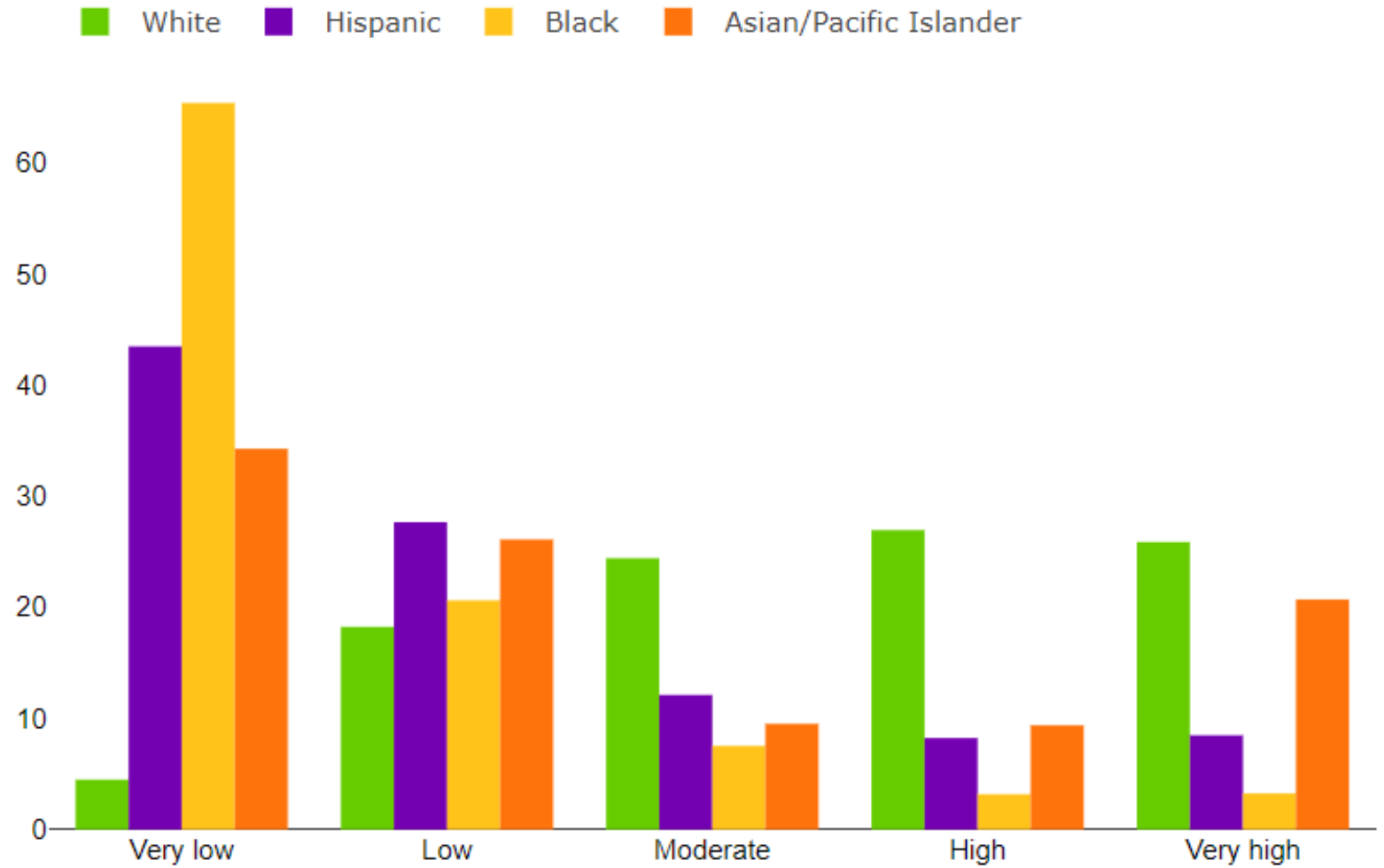
Children aged 0-17 years



Percent of children by Child Opportunity Level

Child Opportunity Levels

Children aged 0-17 years

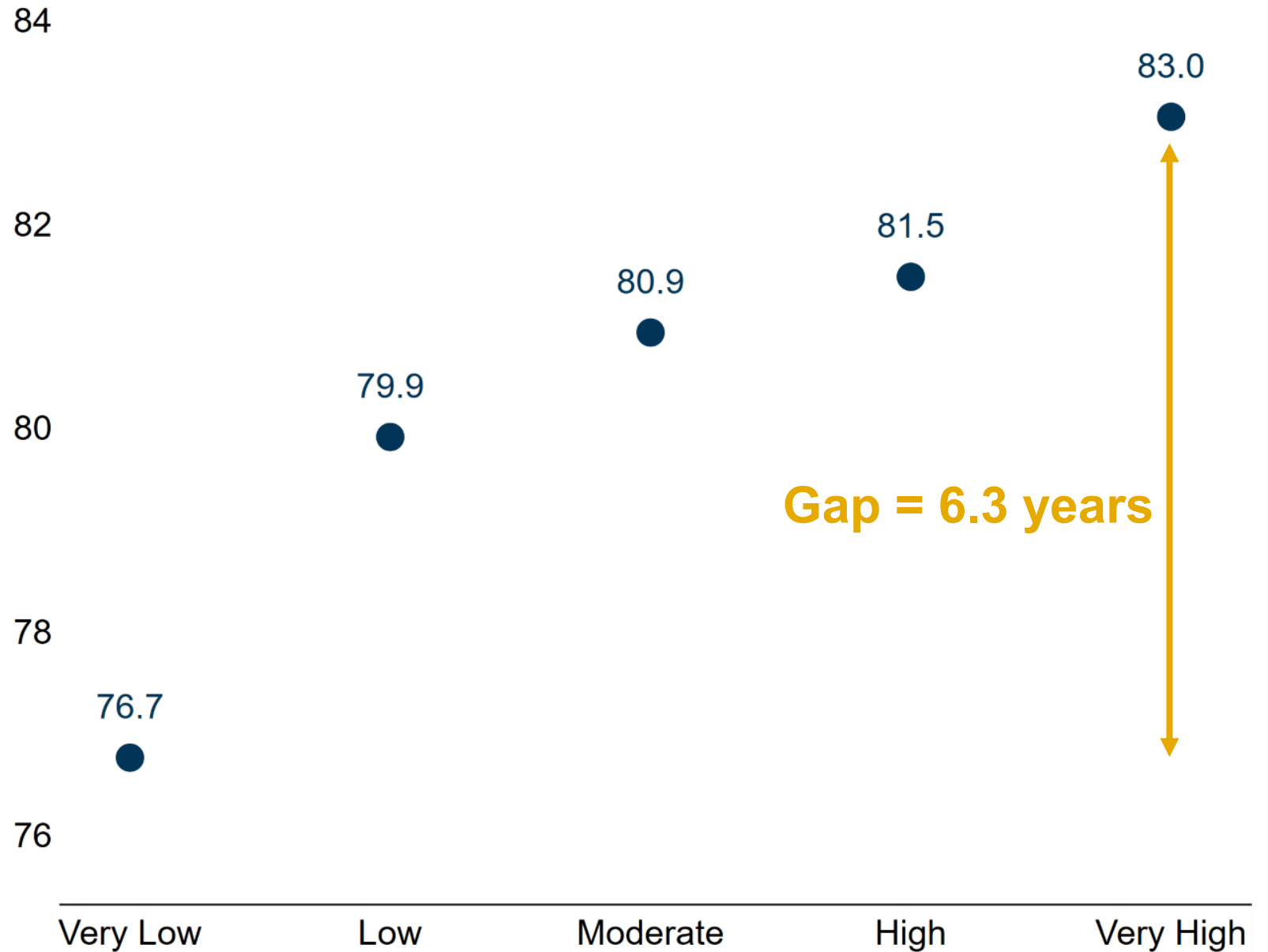


Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey 5-Year Summary Files.

Life expectancy by Child Opportunity Level

The average number of years a person can be expected to live at birth

Child Opportunity Levels



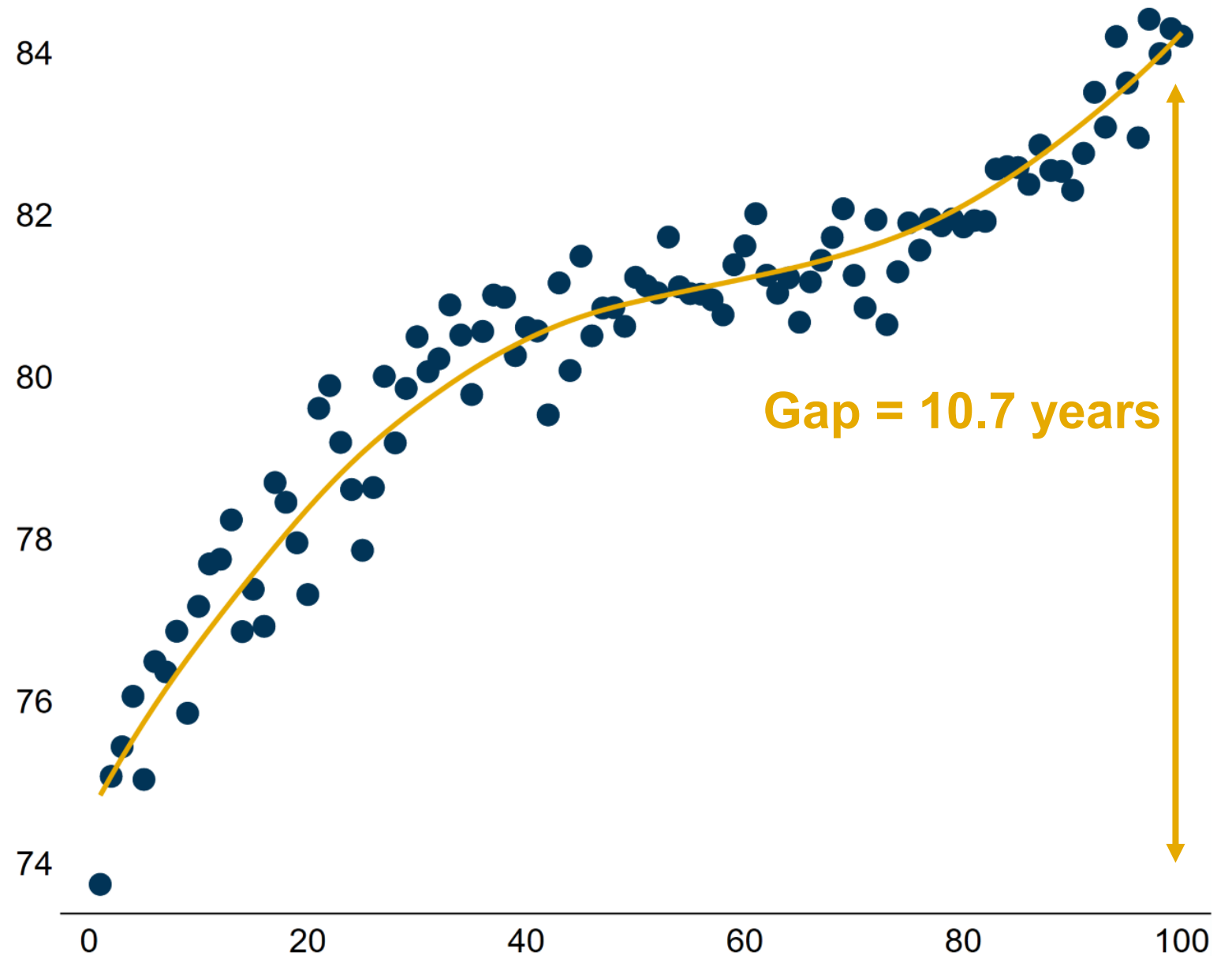
Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; National Center for Health Statistics, United States Small-area Life Expectancy Estimates Project (USALEEP).

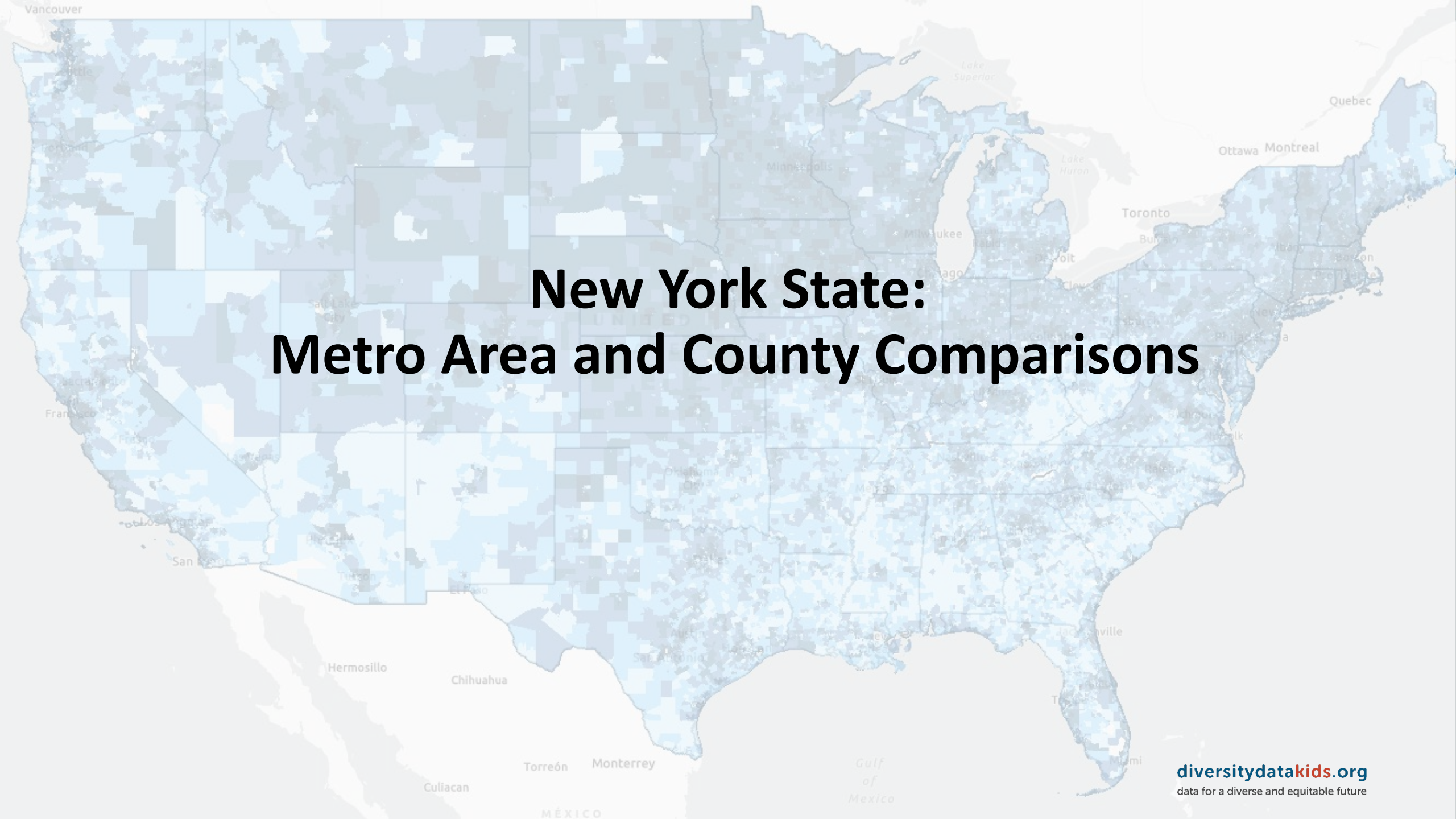
Life expectancy by Child Opportunity Score

The average number of years a person can be expected to live at birth

Child Opportunity Scores

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database; National Center for Health Statistics, United States Small-area Life Expectancy Estimates Project (USALEEP).





New York State: Metro Area and County Comparisons

Child Opportunity Scores and rankings for metro areas in New York State

The 100 largest metropolitan areas in the U.S. are ranked from 1-100

A score of 1 represents the metro where children have the highest opportunity levels

Metropolitan Area	Child Opportunity Score (0-100)	Child Opportunity Level	Ranking (0-100)
Albany-Schenectady-Troy	78	High	8
Rochester	67	High	23
Buffalo-Cheektowaga-Niagara Falls	64	Moderate	34
Syracuse	60	Moderate	44
New York-Newark-Jersey City	51	Moderate	67

Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey, 2013-2017.

Child Opportunity Gaps for metro areas in New York State

The Child Opportunity Gap =

The difference in Child Opportunity Score between very low opportunity and very high opportunity neighborhoods

Metropolitan Area	Child Opportunity Score: Very low opportunity	Child Opportunity Score: Very high opportunity	Child Opportunity Gap
Rochester	4	98	94
Buffalo	4	95	91
New York	6	93	87
Syracuse	4	90	86
Albany	15	97	82

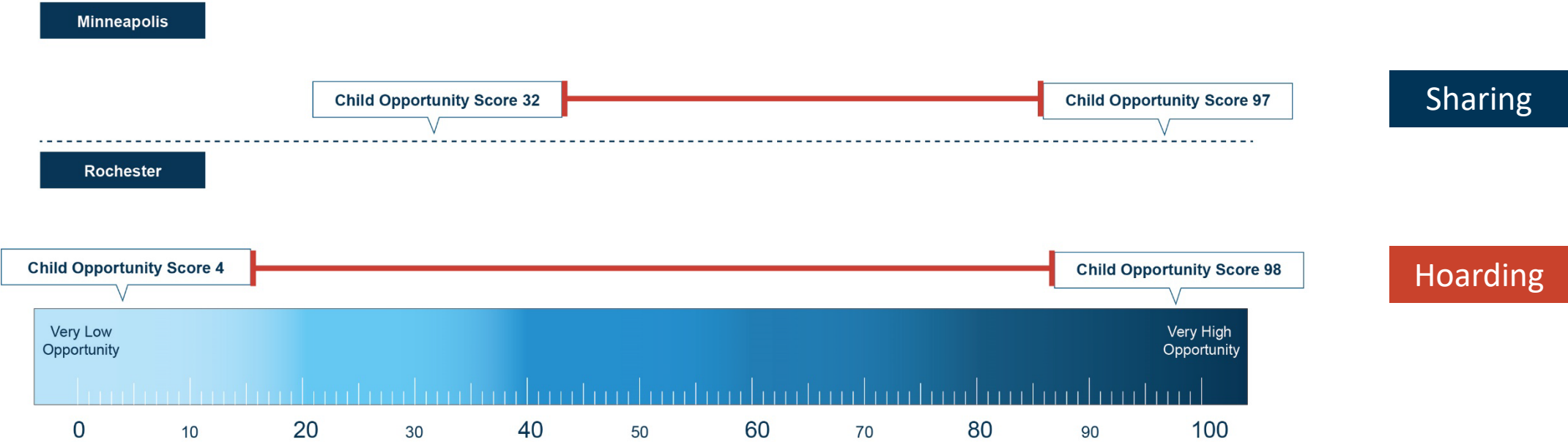
Rochester has the largest Child Opportunity Gap out of the 100 largest metros in the U.S.

Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey, 2013-2017.

Opportunity hoarding vs. opportunity sharing

In all metro areas in New York State, there are wide gaps in opportunities for children in the highest vs. lowest opportunity neighborhoods. We describe metros with the widest gaps as hoarding metros.

The Child Opportunity Gap in Rochester, NY and Minneapolis, MN, both high opportunity metros

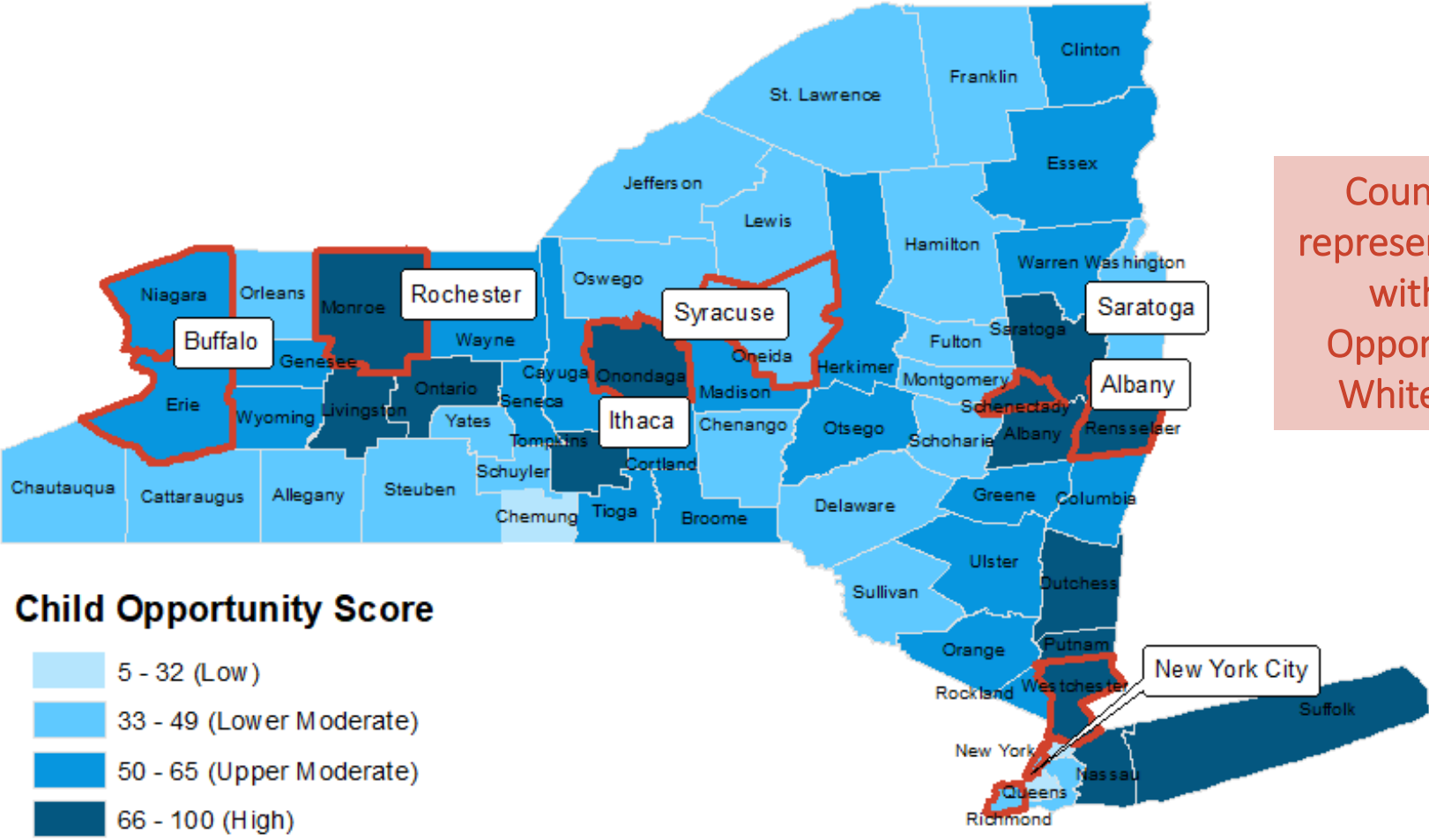


diversitydatakids.org

We define hoarding as metros with a Child Opportunity Gap > 80 points

Black-White Child Opportunity Gaps for New York Counties

The map highlights the top 10 most unequal New York Counties



Counties outlined in red represent the top 10 counties with the largest Child Opportunity Gap between White and Black children

Darker color indicates higher Child Opportunity Score

COI county level data will be publicly available in 2021

Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey, 2013-2017.

Most and least equitable New York counties for Black children

Are counties with the most opportunities also the most equitable?

	Place	Child Opportunity Score (Black)	Child Opportunity Score (White)	Child Opportunity Score (Overall)	Child Opportunity Level (Overall)	Opportunity Gap	% Black*
Statewide Average	New York State	13	67	47	Moderate	54	17.1%
Most unequal	New York County	13	96	47	Moderate	83	18.8%
	Monroe County	6	86	74	High	80	21.3%
	Albany County	9	89	79	High	80	15.9%
Most equal	Orange County	37	56	54	Moderate	19	10.8%
	Ulster County	44	61	57	Moderate	17	5.8%
	Rockland County	52	55	55	Moderate	3	10.8%

*only counties with a Black child population of 5% or greater were included in rankings

COI county level data will be publicly available in 2021

Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey, 2013-2017.

Most and least equitable New York counties for Hispanic children

Are counties with the most opportunities also the most equitable?

	Place	Child Opportunity Score (Hispanic)	Child Opportunity Score (White)	Child Opportunity Score (Overall)	Child Opportunity Level (Overall)	Opportunity Gap	% Hispanic*
Statewide Average	New York State	23	67	47	Moderate	44	17.1%
Most unequal	New York County	15	96	47	Moderate	81	36.4%
	Monroe County	9	86	74	High	77	13.6%
	Erie County	12	78	66	High	66	8.9%
Most equal	Orleans County	35	37	35	Moderate	2	8.4%
	Rockland County	53	55	55	Moderate	2	19.5%
	Tompkins County	77	73	73	High	-4	6.3%

*only counties with a Hispanic child population of 5% or greater were included in rankings

COI county level data will be publicly available in 2021

Source: diversitydatakids.org. Child Opportunity Index 2.0 Database. Population data from American Community Survey, 2013-2017.

A map of the United States with a blue grid overlay. The grid consists of small squares, some of which are darker blue, indicating data points. Major cities are labeled across the map, including Vancouver, Seattle, Portland, San Francisco, Sacramento, San Jose, San Diego, Phoenix, Tucson, El Paso, San Antonio, Austin, Dallas, Houston, New Orleans, Miami, Jacksonville, Atlanta, Chicago, Detroit, Milwaukee, Minneapolis, St. Louis, Kansas City, Denver, Salt Lake City, Albuquerque, Dallas, Houston, New Orleans, Atlanta, Philadelphia, New York, Boston, Toronto, Montreal, and Quebec. The Gulf of Mexico is labeled at the bottom. The text "UNITED STATES" is visible in the center of the map.

Demo of COI website tools on diversitydatakids.org

Centering children's rights

Mobilizing data for equity

[Access raw datasets](#) [↗](#)

[Explore our research](#) [↗](#)

[Learn about racial patterns of child opportunity](#)

Child Opportunity Index (COI)

Access COI datasets

Read COI impact stories

Learn about our methodology

Neighborhoods matter. Children who live in neighborhoods with quality early childhood education and schools, safe housing, access to healthy food, parks and playgrounds and clean air are more likely to grow into healthy, productive adults than children who don't. The Child Opportunity Index (COI) measures and maps the quality of resources and conditions that matter for children to develop in a healthy way in the neighborhoods where they live.

Underlying all our work is a commitment to equity. We believe all children deserve an equal opportunity to grow and learn. Our core question is whether all children—regardless of where they live or their race and ethnicity—have a fair chance of experiencing neighborhood conditions that help them thrive. We hope to widen the national conversation about addressing inequality to include not only income and wealth but also the neighborhood environments that our children experience.

Developed in 2014 in collaboration with the Kirwan Institute for the Study of Race and Ethnicity at Ohio State University, the COI has been widely used to spark conversations about unequal access to opportunity and to spur actions to increase equity.

COI 2.0, launched in 2020, responds to users' requests for an updated index and includes new data and improved methods.

Latest News

11.03.2020

All children count. All children must be counted.

10.05.2020

Racial and Ethnic Inequities in Children's Neighborhoods: Evidence from the New Child Opportunity Index 2.0

diversitydatakids.org introduces the Child Opportunity Index 2.0 in Health Affairs

10.02.2020

Opportunity hoarding linked to racial and ethnic inequities in children's neighborhoods

<http://diversitydatakids.org/child-opportunity-index>



Research report Neighborhoods

The Geography of Child Opportunity: Why Neighborhoods Matter for Equity

Read the report



Data visualization Neighborhoods

What does child opportunity look like in your metro?

Explore metro maps



Research brief Neighborhoods

What is child opportunity?

Our terms, defined in brief

What does child opportunity look like in your metro?

By Nick Huntington, Mikyung Baek

12.17.2019

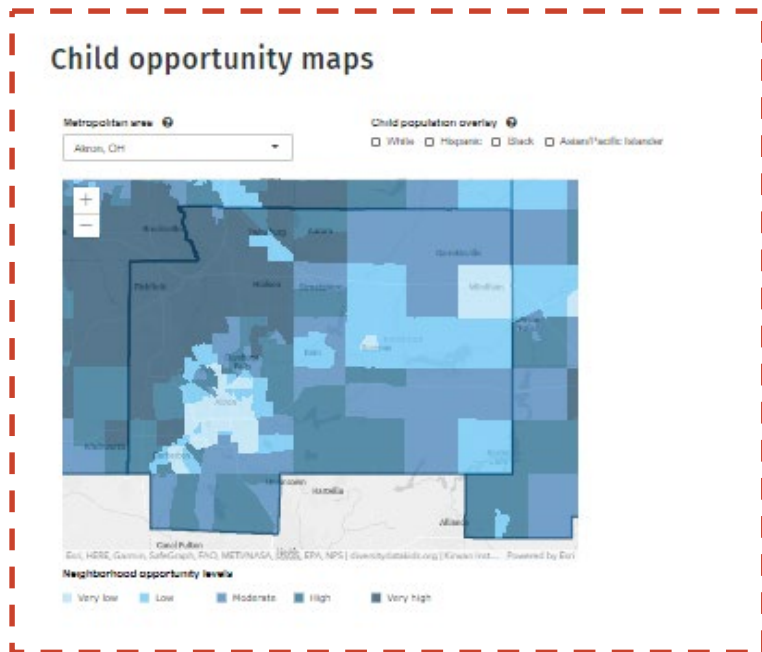
Child Opportunity Index maps for the 100 largest metropolitan areas are available below. You can explore the geography of child opportunity within a metro and where children of different racial/ethnic groups live in relation to opportunity.

[Explore the maps](#) ↓

Use the pull down menu below the map to select a metro area. The small areas in the map represent all neighborhoods (census tracts) in that metro. Each neighborhood is shaded a color ranging from very light blue (the bottom 20% of neighborhoods with very low opportunity) up to the darkest blue (the top 20% of neighborhoods with very high opportunity).

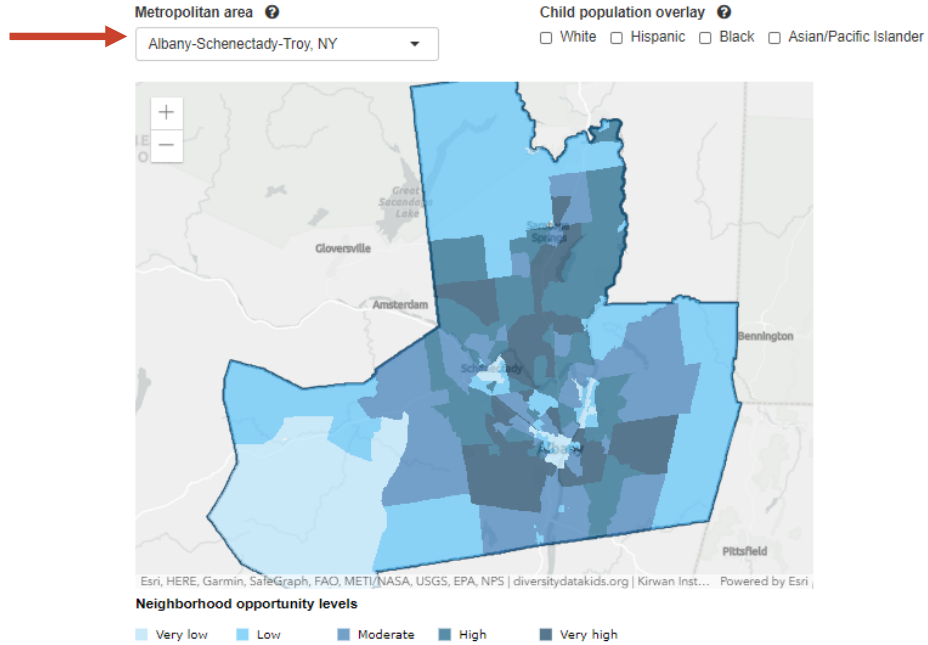
You can also explore where children of different racial/ethnic groups live in relation to the geography of opportunity. Select one or more racial/ethnic groups from the pull down menu. The colored dots show the distribution of children from that racial/ethnic group across the metro. The higher the density of dots, the more children of that racial/ethnic group live in the neighborhood. Note that the locations of the dots do not represent the precise location of children.

The bar chart on the right shows the percentage of children of a given racial/ethnic group by opportunity level in a metro.

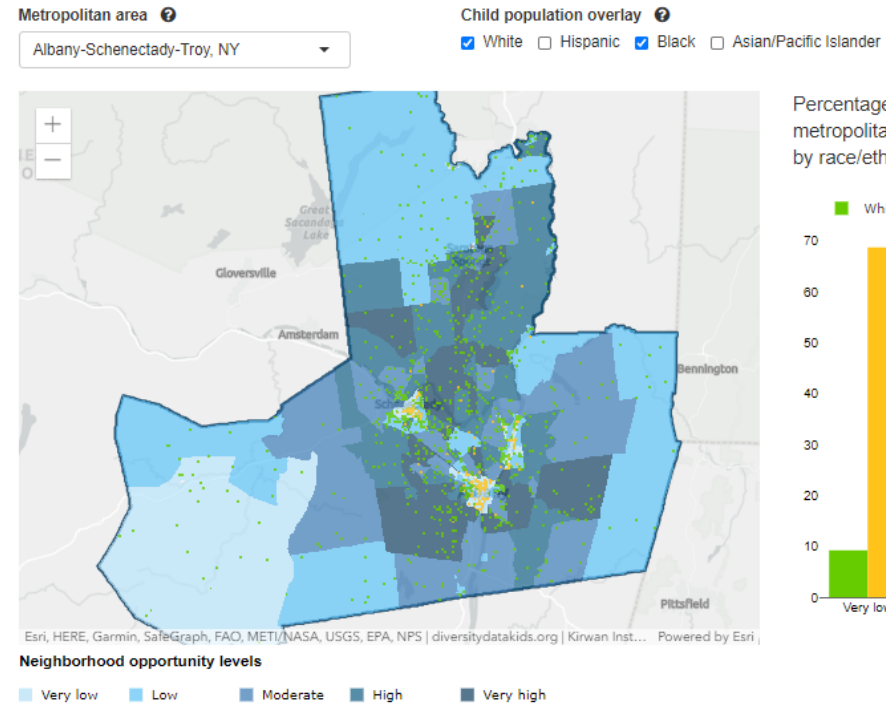


Child opportunity maps

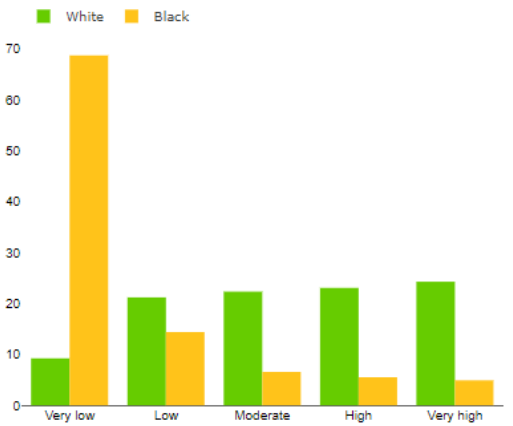
#1



#2



Percentage of children in the Albany-Schenectady-Troy, NY metropolitan area at each neighborhood opportunity level, by race/ethnicity



Centering children's rights

Mobilizing data for equity

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[Explore our research](#) [🔗](#)

[Learn about racial patterns of child opportunity](#)

Topic

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- Demographics (193)
- Early childhood (16)
- Education (38)
- Family (16)
- Health (9)
- Housing (49)
- Income (65)
- Neighborhoods (103)
- Work (50)


Subtopic

- Adults (47)
- Age structure (4)
- American origin (2)
- Ancestry (40)
- Arab origin (2)
- Asian origin (10)
- Car ownership (10)
- Children (52)
- Citizenship status (6)
- College degree (12)
- College or graduate school enrollment (3)
- Commuting (20)

Search datasets...



323 datasets found

Order by: Relevance 

Child Opportunity Index 2.0 database

The Child Opportunity Index 2.0 (COI 2.0) is a composite index measured at the census tract level that captures neighborhood resources and conditions that matter for children's...

Year(s): Data available for 2010 & 2015.

Working adults who are eligible and can afford FMLA unpaid leave (percent) by race/ethnicity

Share of working adults who are estimated to be eligible for and may be able to afford to take Family and Medical Leave Act (FMLA) unpaid leave, for each specified...

Wage loss as a percent of family income after paid or unpaid FML (percent) by race/ethnicity

Estimated share of quarterly family income lost for a full-year working adult ages 21-64 after taking 12 weeks of unpaid family or medical leave and after taking 12 weeks of...

Geography

Census divisions (303)

Census regions (303)

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Time Scale

5-Year Data (303)

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Formats

CSV (323)

Head Start eligible children per center in Head Start eligible children's immediate neighborhoods (count) by race/ethnicity

The number of Head Start eligible children per Head Start center in the neighborhood (census tract) where the average Head Start eligible child, in the specified race/ethnicity...

Public preschool enrollment rates in children's (0-4) neighborhoods (percent) by race/ethnicity and nativity

The public preschool enrollment rate among 3- and 4-year-olds in the average neighborhood where young children (0-4) in the specified race/ethnicity category live.



You can also access this registry using the API (see API Docs).

Topic

- Demographics (2)
- Early childhood (4)
- Income (2)
- Neighborhoods (2)

Subtopic

- Children (2)
- Neighborhood availability of Head Start (2)
- Poverty (1)
- Poverty rate (1)

Scale

- Count (2)
- Percent (2)

Available by Race and Ethnicity

- Yes (4)

Age Group

- 0-4 (4)

Nativity

- Total (4)

Gender

- Total (4)

Geography

poverty



4 datasets found for "poverty"

Order by: Relevance

Poverty rate, children aged 0-4 (percent) by race/ethnicity

The number of children aged 0-4 years who live in families/households with incomes below 100% of the federal poverty threshold divided by the number of children aged 0-4 years...

Year(s): Data available for 2009-2017, except for city neighborhoods (2010-2017), ZIP code tabulation areas (2011-2017), and census tracts (2012 & 2017).

Children aged 0-4 who are poor (count) by race/ethnicity

The number of children aged 0-4 years who live in families/households with incomes below 100% of the federal poverty threshold, for the total population and by race/ethnicity.

Year(s): Data available for 2009-2017, except for city neighborhoods (2010-2017), ZIP code tabulation areas (2011-2017), and census tracts (2012 & 2017).

Head Start eligible children with a Head Start center in their immediate neighborhood (percent) by race/ethnicity

The share of Head Start eligible children of the specified race/ethnicity or nativity category that have a Head Start preschool center located within their immediate neighborhood.

Head Start eligible children per center in Head Start eligible children's immediate neighborhoods (count) by race/ethnicity

The number of Head Start eligible children per Head Start center in the neighborhood (census tract) where the average Head Start eligible child, in the specified race/ethnicity...





Using the COI to increase equity

Consider sharing your story with us at
diversitydatakids.org/impact-stories

Using the COI

Research

Monitoring

Benchmarking

Measuring community assets and needs

Studying associations between neighborhood opportunity and children's outcomes

Decision making

Data-driven place-based targeting of investments / services

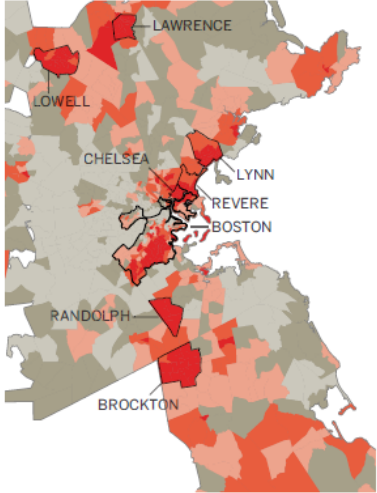
Raising awareness within organizations, locally, and nationally

Racial/ethnic justice, neighborhood and racial/ethnic inequities in access to opportunity

Opportunity and subsidized housing

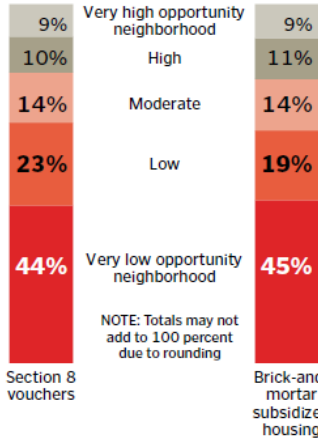
Brick-and-mortar subsidized housing tends to cluster in struggling neighborhoods. And so do the Section 8 housing vouchers that can, in theory, be used anywhere.

NEIGHBORHOOD OPPORTUNITY LEVEL



OPPORTUNITY INDEX

Just 9 percent of brick-and-mortar subsidized housing is in very high opportunity neighborhoods, with the best access to jobs, healthy food, and quality schools:



How healthy is your neighborhood for your child? Take a look by Sandee LaMotte, CNN



Childhood Opportunity Varies Dramatically by Neighborhood

A new report shows stark inequities in neighborhood conditions for children across the country, holding serious implications for later in life.



The enormous racial opportunity gap in America's metro areas



Economy

What shapes a kid's opportunities? Researchers say look to the neighborhood.



DATA

We Tried to Find the Most Equal Place in America. It Got Complicated



SALUD INFANTIL

Cuando tu vecindario marca tu futuro: el mapa que retrata la gran desigualdad en EEUU



Jan 22, 2020

America's hardest places to grow up



NATIONAL

In Nearly Every U.S. Metro Area, New Data Show Opportunity Lags For Kids Of Color

December 18, 2019 · 3:18 PM ET

California cities rank among country's best and worst places to raise kids, study says



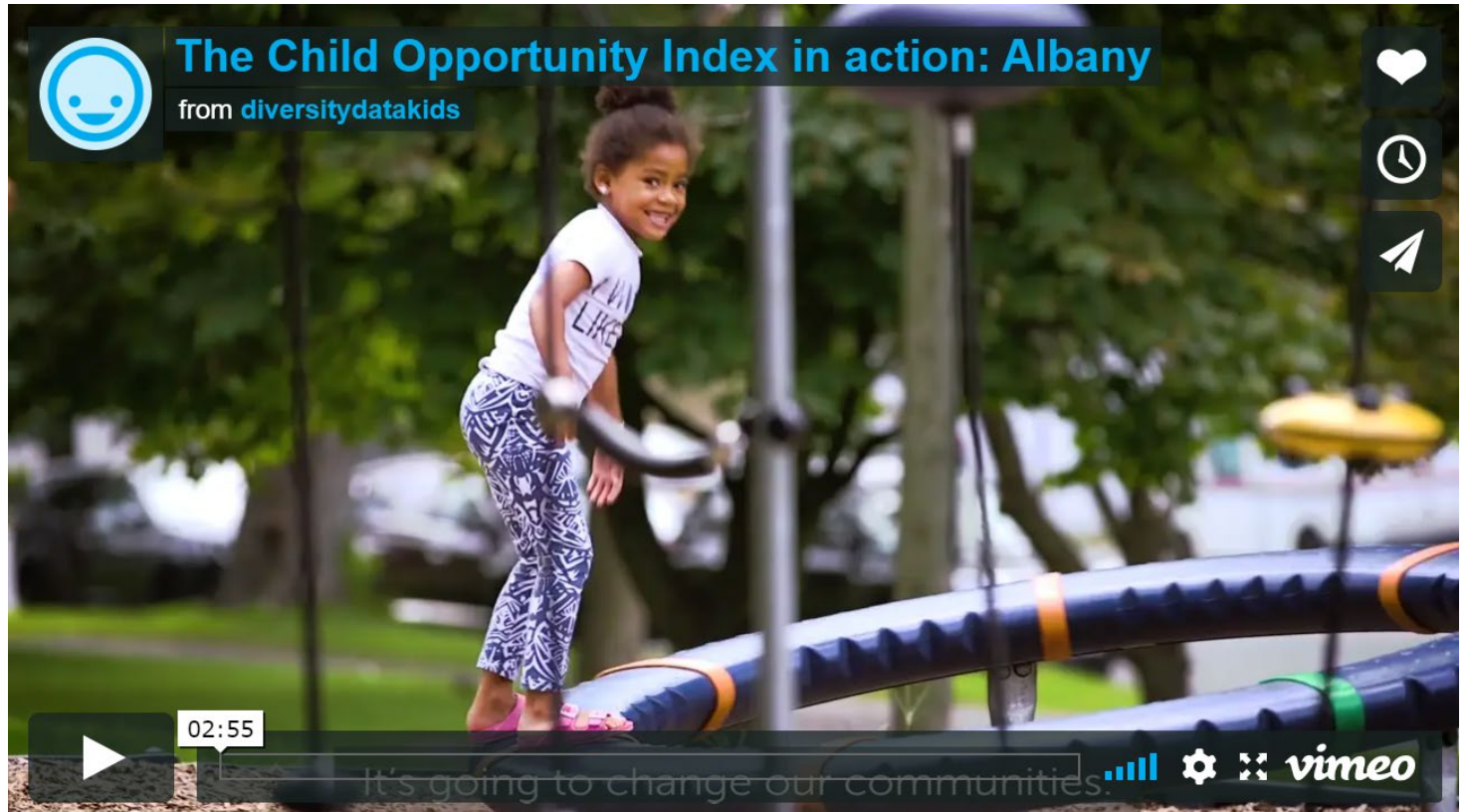
City of Albany, NY

“That data was my awakening. I was relatively new in the role, and the data showed me what my main focus needed to be: thinking about how to create more equitable neighborhoods.”

Jonathan Jones, Commissioner of
Recreation, Youth and Services, Albany,
NY

<http://diversitydatakids.org/research-library/impact-story/keeping-kids-active-Albany>
<http://diversitydatakids.org/research-library/impact-story/watch-revitalizing-parks-and-playgrounds-albany>

Five-year capital improvement plan to revitalize Albany’s highest used and most in-need parks and playgrounds



Juvenile Welfare Board, Pinellas County, Florida

Taxing authority supporting children and youth, uses the COI to

Target services to areas of need

Monitor change over time

Identify issues/areas requiring further investigation

<http://diversitydatakids.org/research-library/impact-story/digging-disparities-florida>



Kids Data Center

JWB is a data-driven organization: we pursue innovation and use the latest research, professional knowledge, and best practices to address the needs of Pinellas County children and families. The Kids Data Center features key community indicators, child well-being data, and data stories designed to bring the numbers to life.

[*PINELLAS CHILD WELL-BEING DATA SHEET](#) ↗

[*PINELLAS CHILD WELL-BEING DATA SOURCE GUIDE](#) ↗

Pinellas Child Opportunity Index

The Pinellas Child Opportunity Index (PCOI) is a composite index designed to measure child opportunity and gauge the health of our neighborhoods at the census tract level. This research ranks every neighborhood on indicators that contribute to a child's healthy development. It provides a richer, more granular view than prior high-risk zones which were based on ZIP codes and focused on a singular variable: poverty.

Moving Data to Action in Chicago

Department of Public Health published community health improvement plan in 2015

Hyper-local view of neighborhood contexts/inequities

Award of community seed grants

Targeting for place-based interventions

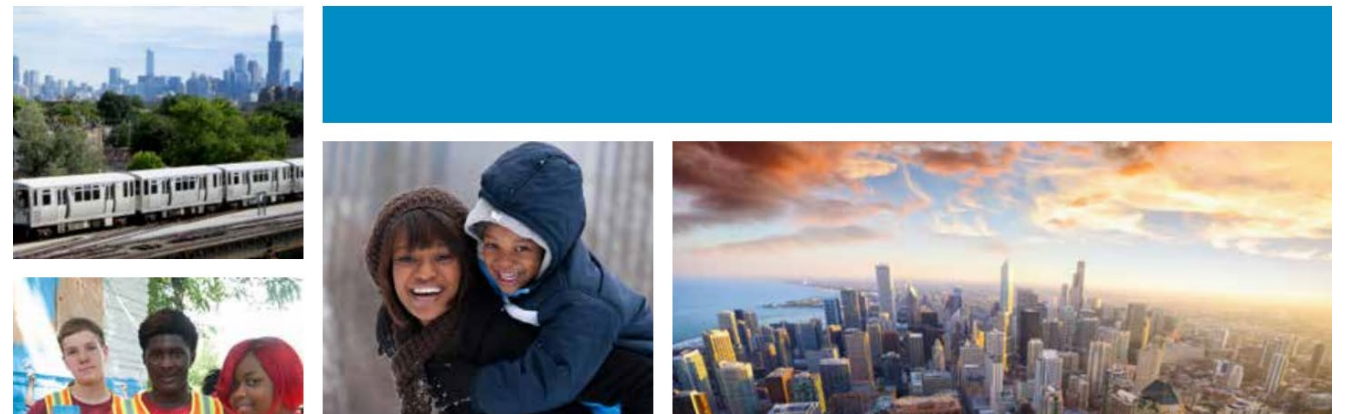
<http://diversitydatakids.org/research-library/impact-story/moving-data-action-chicago>



HEALTHY CHICAGO 2.0

PARTNERING TO IMPROVE HEALTH EQUITY

2016 - 2020



Rush University Medical Center, Chicago, Illinois

Community health needs assessment

Analyze causes of morbidity

Identify neighborhoods for
interventions / provision of
services

<http://diversitydatakids.org/research-library/impact-story/moving-data-action-chicago>

**Brittney Lange-Maia (Rush
Medical Center) says the COI
shapes the questions her
team members now ask:**

**“What neighborhoods
should we focus our
community services on?
Where are we sending our
volunteers? Are they
servicing the right
neighborhoods based on
what we know?”**



THANK YOU

diversitydatakids.org/child-opportunity-index

Questions?

diversitydatakids.org/contact-us

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diversitydatakids.org/submit-your-story

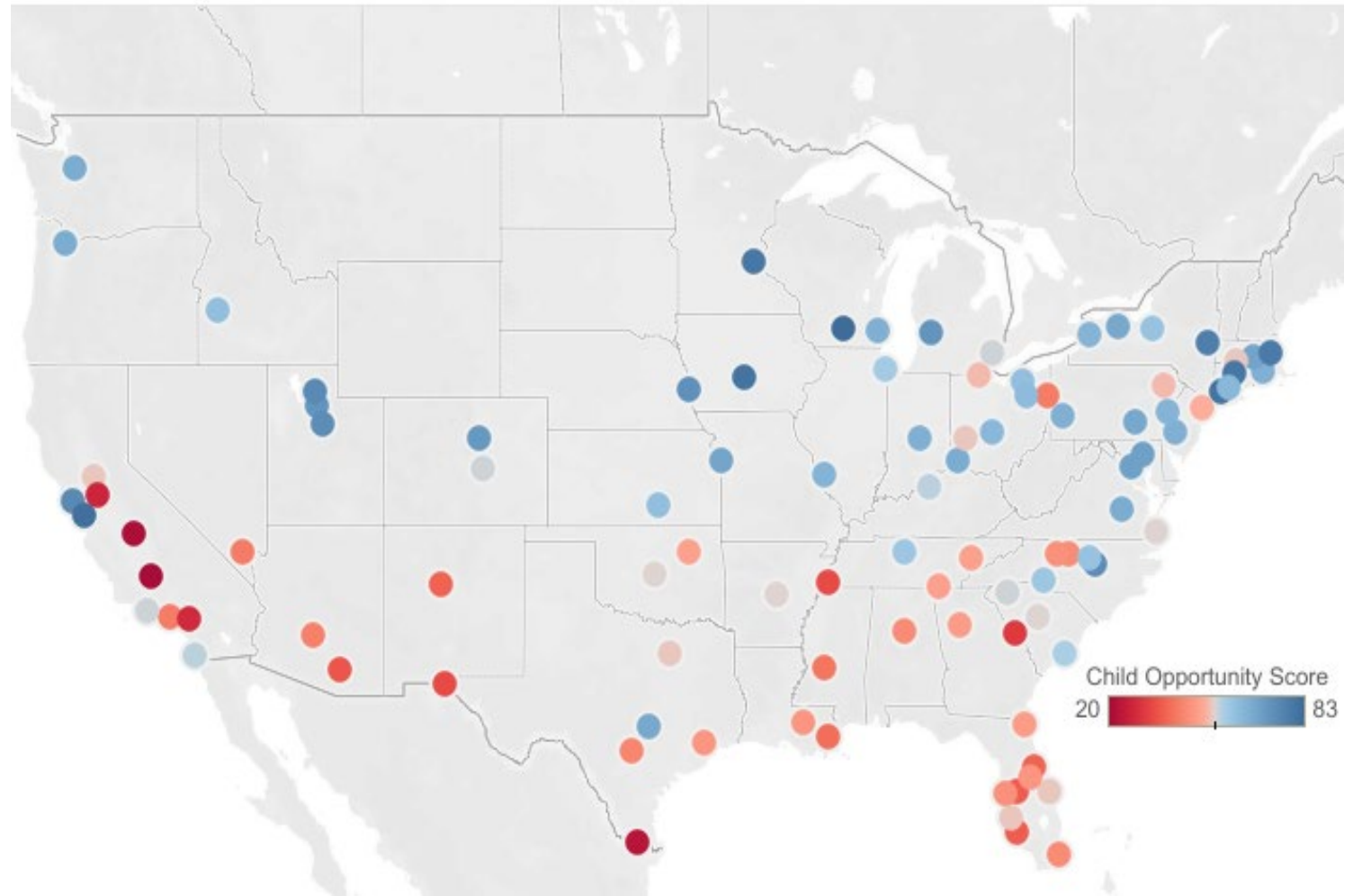
diversitydatakids.org

data for a diverse and equitable future

100 LARGEST METRO AREAS

Child Opportunity Scores

Median child opportunity scores (nationally-normed) for the 100 largest metro areas



Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database.

COI 2.0 metrics:

Three versions (with different norming approaches) available

Metro-, state- and nationally normed opportunity scores and levels

To compare neighborhoods within one metro area, use metro normed metrics

To compare neighborhoods within one state, use state normed metrics

For all other use cases, use nationally normed metrics

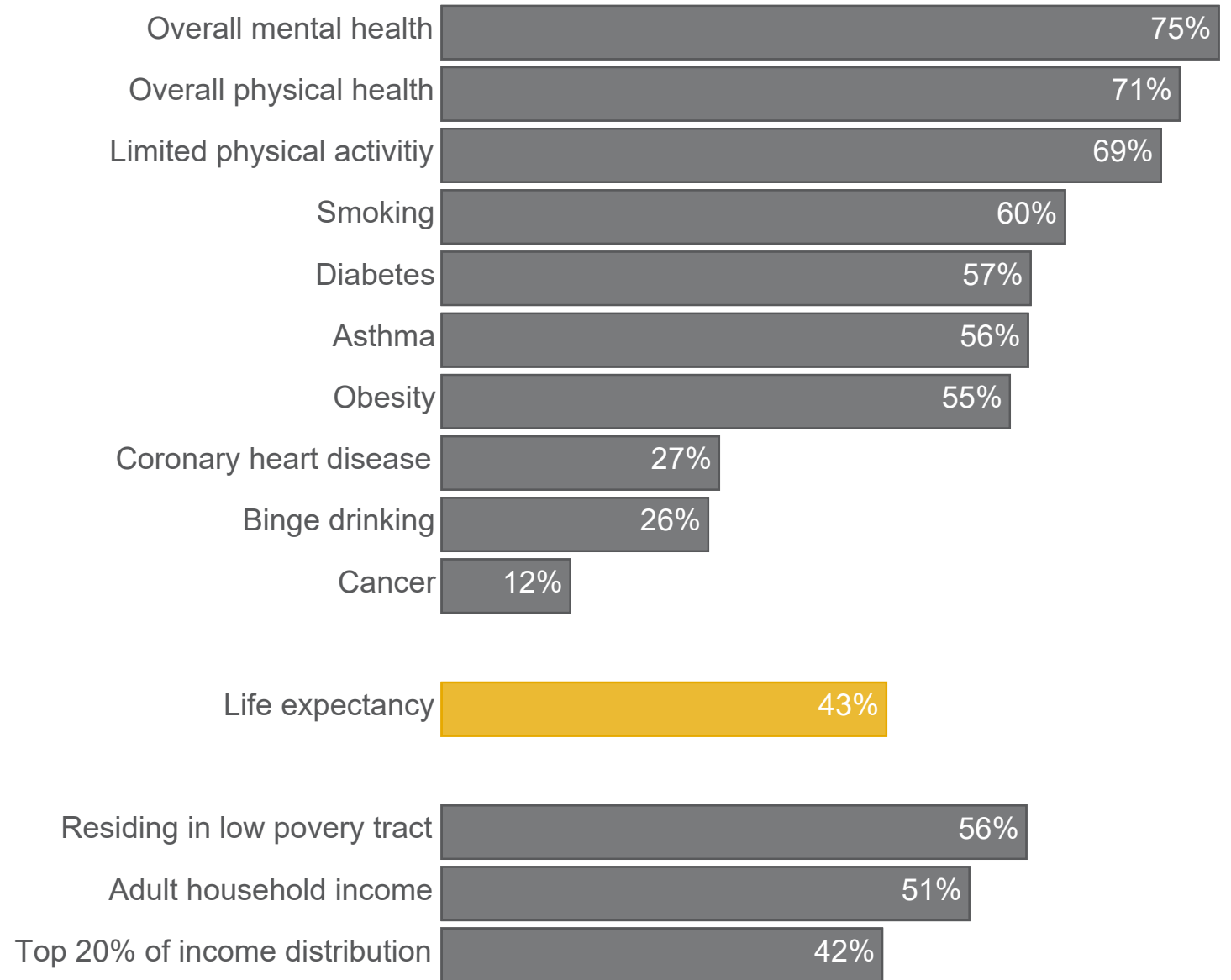
COI 2.0 PREDICTIVE VALIDITY

Percent variance explained across different outcomes

R² statistics from regressions of 14 health and socio-economic adult outcomes on COI 2.0 overall average z-score

72,000 U.S. census tracts

Sources: diversitydatakids.org, Child Opportunity Index 2.0 Database. Chetty et al., Opportunity Atlas. NCHS, 500 Cities and USALEEP.



Outcomes used for constructing weights

Socio-economic outcomes from Opportunity Atlas (Chetty et al.)

Mean household income rank in adulthood (parents at median of parent income distribution)

Probability of living in a low poverty census tract in adulthood (parents at median of parent income distribution)

Summary health outcomes from 500 Cities Project (CDC, RWJF)

Mental health not good for 14 or more days among adults

Physical health not good for 14 or more days among adults

Combining empirical and constant weights

Empirical weights reflect how well indicators predict outcomes

Need: Average causal effect for all indicators

Have: Estimated (conditional/unconditional) association between each indicator and tract-level SES and health outcomes in representative/recent data

Constant weights: Each indicator counts equally

Least worst solution in the absence of any information on what weights should be

For COI 2.0, we combined both approaches

We average empirical and constant weights to guard against bias in the empirical weights

Averaging empirical and constant weights shrinks large empirical weights and inflates small empirical weights towards a domain specific constant

Combining empirical and constant weights

How we calculate weights

Estimate bivariate correlation (Pearson's rho) between indicator z-scores (2010) and each of the four outcomes

Average rho's for each indicator j across outcomes ($= \text{rho}_j$)

Rescale rho_j to sum up to number of indicators in each domain

Calculate weight for indicator j as $w_j = (\text{rho}_j + 1) / 2$

Rescale w_j to sum up to one in each domain

Sensitivity analyses

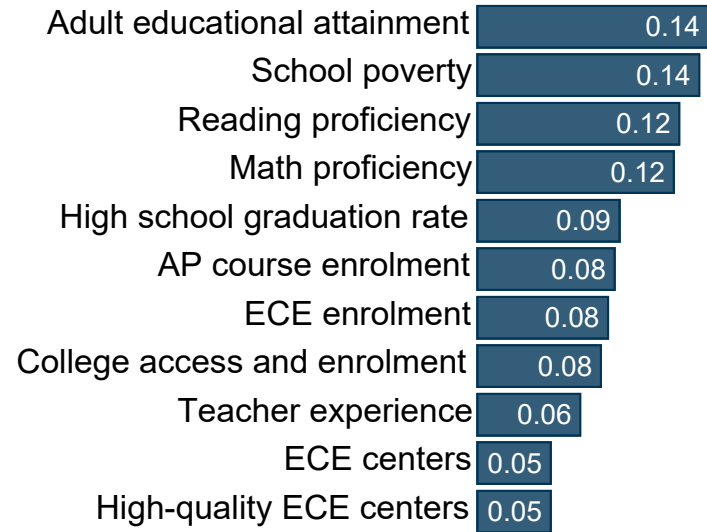
Re-estimate correlations with county fixed effects and controlling for economic resources and population density

COI 2.0 PREDICTIVE VALIDITY

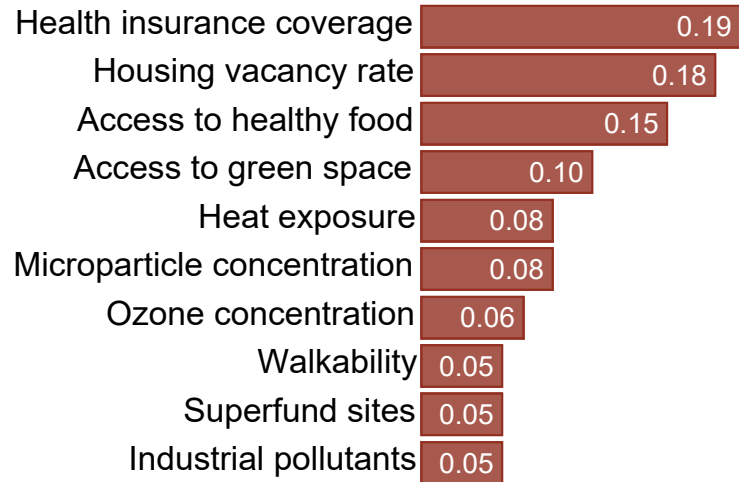
Indicator weights by domain

Weights sum to one in each domain

Sources: diversitydatakids.org



Education



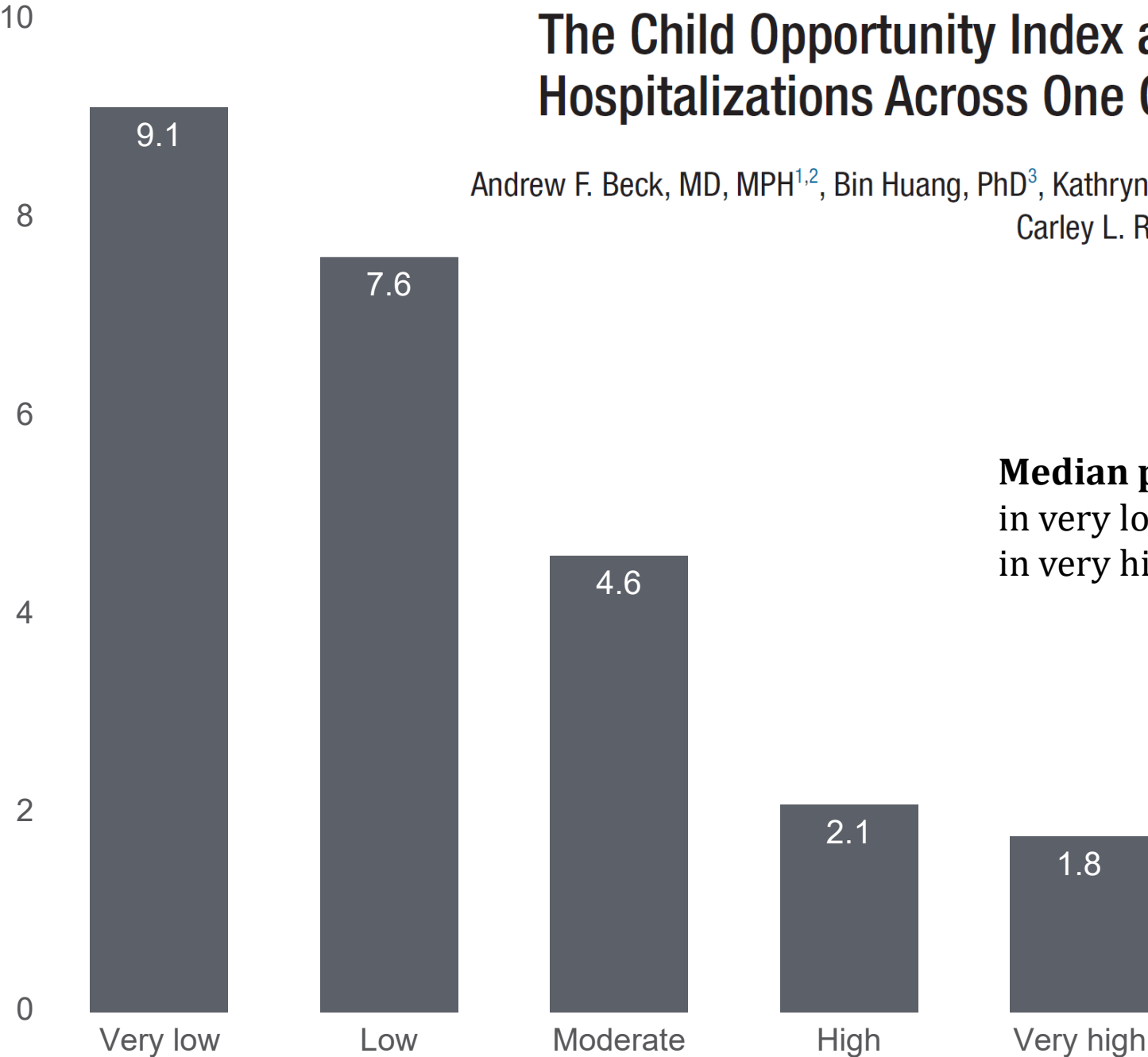
Health & Environment



Social & Economic

The Child Opportunity Index and Disparities in Pediatric Asthma Hospitalizations Across One Ohio Metropolitan Area, 2011-2013

Andrew F. Beck, MD, MPH^{1,2}, Bin Huang, PhD³, Kathryn Wheeler⁴, Nikki R. Lawson, BS⁵, Robert S. Kahn, MD, MPH¹, and Carley L. Riley, MD, MPP, MHS⁶

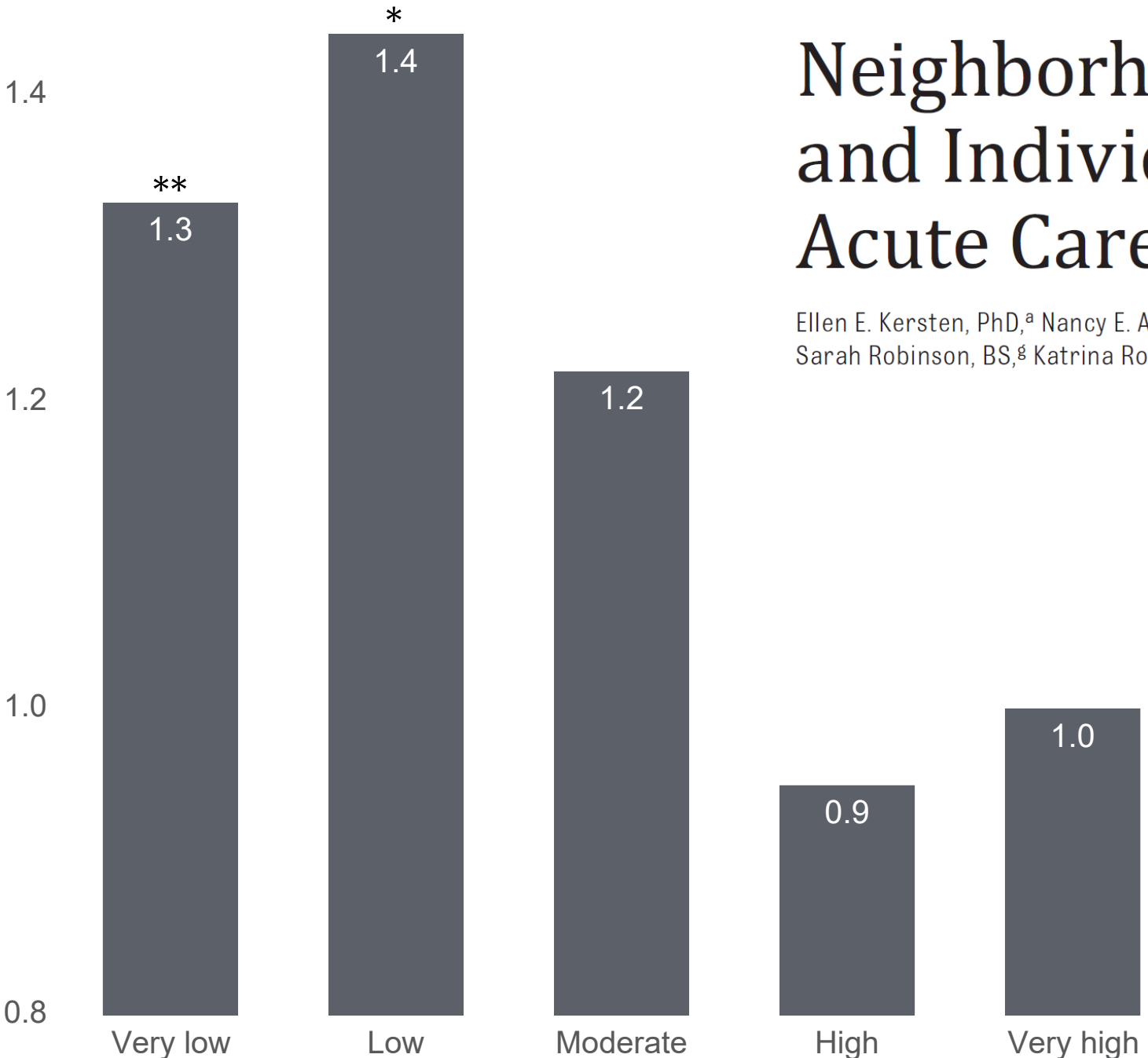


Median pediatric asthma hospitalizations
in very low opportunity tracts = 9.1 per 1000 children
in very high opportunity tracts = 1.8 per 1000 children

Journal of Pediatrics 2017, 190:200-6

Neighborhood Child Opportunity and Individual-Level Pediatric Acute Care Use and Diagnoses

Ellen E. Kersten, PhD,^a Nancy E. Adler, PhD,^{a,b,c} Laura Gottlieb, MD, MPH,^{c,d} Douglas P. Jutte, MD, MPH,^{e,f} Sarah Robinson, BS,^g Katrina Roundfield, PhD,^a Kaja Z. LeWinn, ScD^{a,c}

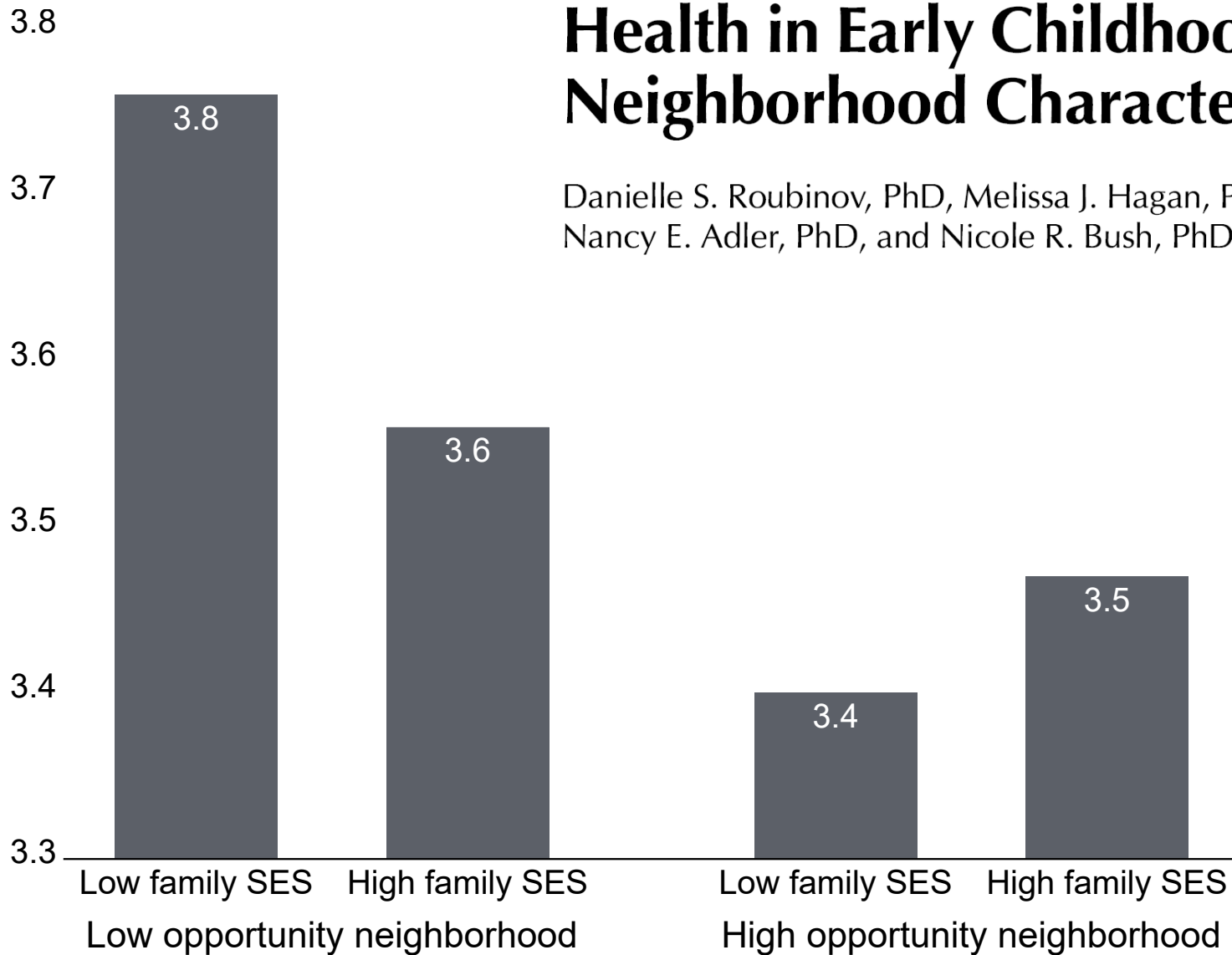


Adjusted odd ratios of having 4 or more acute care visits within one year, relative to children in very high opportunity neighborhoods
Children in low (very low) opportunity neighborhoods had 40% (30%) greater odds of acute care admissions than children in very high opportunity neighborhoods

Pediatrics. 2018, 141(5):e20172309

Family Socioeconomic Status, Cortisol, and Physical Health in Early Childhood: The Role of Advantageous Neighborhood Characteristics

Danielle S. Roubinov, PhD, Melissa J. Hagan, PhD, MPH, W. Thomas Boyce, MD, Nancy E. Adler, PhD, and Nicole R. Bush, PhD



Children's cortisol levels (AUC_g)
Lower family SES was associated with higher daily cortisol output only at lower levels but not at higher levels of neighborhood opportunity.

Psychosomatic Medicine, 2018: 80:492-501

Child Opportunity Index (COI) vs. Opportunity Atlas

Child Opportunity Index

Composite index based on 29 indicators covering three domains

Focus on contemporary features of neighborhoods linked to healthy child development by previous research

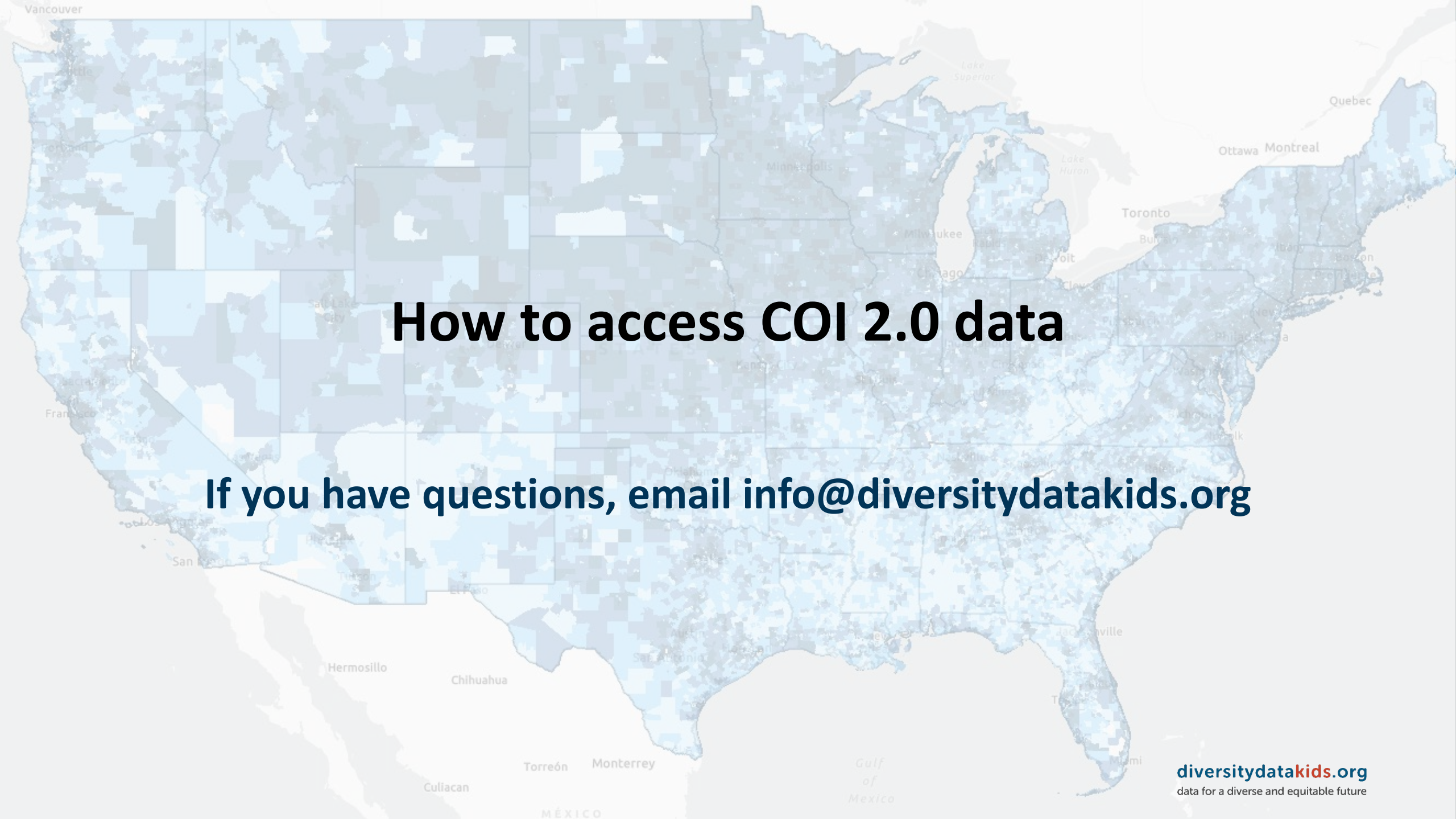
Incorporates OA (and 500 Cities data) to improve predictive validity

Opportunity Atlas (Chetty et al. 2018)

Estimates of long-term effects of growing up in different neighborhoods on, e.g., household income rank, marital status, and incarceration in adulthood

Effects of neighborhoods as they were 15-20 years ago

No information about features of neighborhoods generating these effects



How to access COI 2.0 data

If you have questions, email info@diversitydatakids.org

HOW TO ACCESS COI 2.0 DATA

- ✓ Go to diversitydatakids.org
- ✓ Click “Access raw datasets”
- ✓ Click “Child Opportunity Index 2.0 database”
- ✓ Preview/download dataset



The screenshot shows the homepage of diversitydatakids.org. The browser address bar displays "diversitydatakids.org". The website header includes the logo "diversitydatakids.org" and the tagline "data for a diverse and equitable future". Navigation links for "About Us", "FAQs", "Impact Stories", "News", and "Contact Us" are visible. A dark blue navigation bar contains the categories "Early Childhood", "Income, Work and Family", and "Neighborhoods". The main content area features a large image of children running with the text "Until every child thrives, every day, everywhere." and "Mobilizing data for equity". Three buttons are present: "Access raw datasets" (with an external link icon), "Explore COI data stories", and "View COI maps".

HOW TO ACCESS COI 2.0 DATA

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Until every child thrives, every day, everywhere.

Mobilizing data for equity

[Access raw datasets](#) [Explore COI data stories](#) [View COI maps](#)

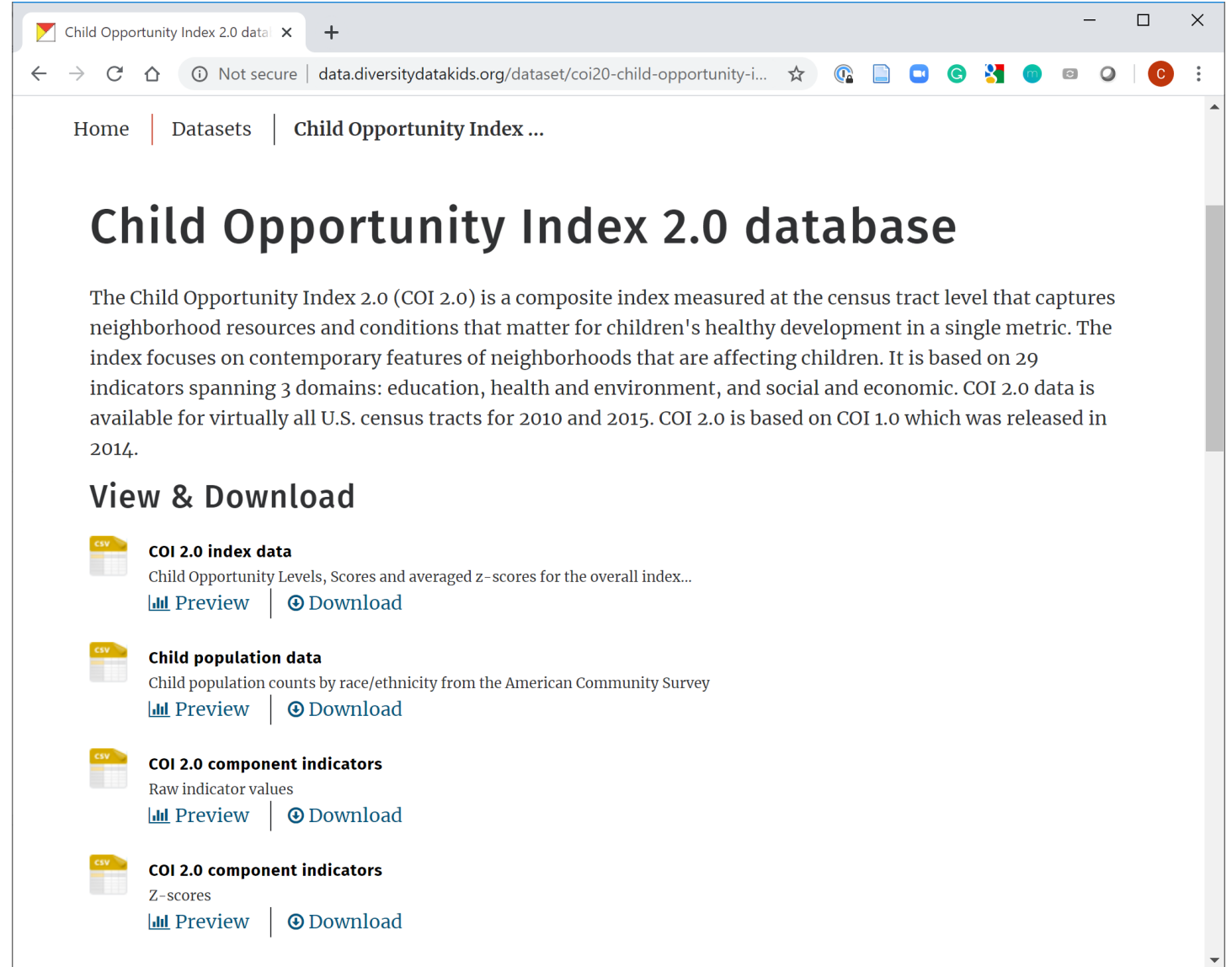
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- ✓ Preview/download dataset

The screenshot shows a web browser window with the URL `data.diversitydatakids.org/dataset`. The page header includes navigation links for "Datasets", "Child Opportunity Index", and "Policy Equity Assessments". The main navigation bar lists categories: "Demographics", "Early Childhood", "Health", "Income, Work & Family", and "Neighborhoods". A search bar is present with the text "Search datasets...". Below the search bar, it indicates "323 datasets found" and an "Order by: Relevance" dropdown menu. A yellow box highlights the "Child Opportunity Index 2.0 database" section, which includes a description: "The Child Opportunity Index 2.0 (COI 2.0) is a composite index measured at the census tract level that captures neighborhood resources and conditions that matter for children's..." and "Year(s): Data available for 2010 & 2015." Below this, another dataset is listed: "Children aged 0-17 with a disability (percent) by race/ethnicity" with a description: "The number of children aged 0-17 years with at least one of the following:"

HOW TO ACCESS COI 2.0 DATA

- ✓ Go to diversitydatakids.org
- ✓ Click “Access raw datasets”
- ✓ Click “Child Opportunity Index 2.0 database”
- ✓ Preview/download dataset



The screenshot shows a web browser window displaying the 'Child Opportunity Index 2.0 database' page. The browser's address bar shows the URL 'data.diversitydatakids.org/dataset/coi20-child-opportunity-i...'. The page has a navigation menu with 'Home', 'Datasets', and 'Child Opportunity Index ...'. The main heading is 'Child Opportunity Index 2.0 database'. Below the heading is a paragraph explaining the index: 'The Child Opportunity Index 2.0 (COI 2.0) is a composite index measured at the census tract level that captures neighborhood resources and conditions that matter for children's healthy development in a single metric. The index focuses on contemporary features of neighborhoods that are affecting children. It is based on 29 indicators spanning 3 domains: education, health and environment, and social and economic. COI 2.0 data is available for virtually all U.S. census tracts for 2010 and 2015. COI 2.0 is based on COI 1.0 which was released in 2014.' Below this text is a section titled 'View & Download' which lists four data products, each with a CSV icon, a title, a description, and 'Preview' and 'Download' links:

- COI 2.0 index data**
Child Opportunity Levels, Scores and averaged z-scores for the overall index...
[Preview](#) | [Download](#)
- Child population data**
Child population counts by race/ethnicity from the American Community Survey
[Preview](#) | [Download](#)
- COI 2.0 component indicators**
Raw indicator values
[Preview](#) | [Download](#)
- COI 2.0 component indicators**
Z-scores
[Preview](#) | [Download](#)

HOW TO ACCESS COI 2.0 DATA

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Home | Datasets | Child Opportunity Index ...

Child Opportunity Index 2.0 database

The Child Opportunity Index 2.0 (COI 2.0) is a composite index measured at the census tract level that captures neighborhood resources and conditions that matter for children's healthy development in a single metric. The index focuses on contemporary features of neighborhoods that are affecting children. It is based on 29 indicators spanning 3 domains: education, health and environment, and social and economic. COI 2.0 data is available for virtually all U.S. census tracts for 2010 and 2015. COI 2.0 is based on COI 1.0 which was released in 2014.

View & Download

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Raw indicator values
[Preview](#) | [Download](#)
-  **COI 2.0 component indicators**
Z-scores
[Preview](#) | [Download](#)

COI 2.0 Metrics

- Scores and Levels
- Metro, state, and nationally normed

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Child Opportunity Index 2.0 data | +

Not secure | data.diversitydatakids.org/dataset/coi20-child-opportunity-i...

Home | Datasets | Child Opportunity Index ...

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Number of children aged 0-17 years

- by race/ethnicity
- From 2012 and 2017 5-Year ACS

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Child Opportunity Index 2.0 data | x +

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Home | Datasets | Child Opportunity Index ...

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- COI 2.0 component indicators**
Z-scores
[Preview](#) | [Download](#)

COI 2.0 component indicators

- **Untransformed data**

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Child Opportunity Index 2.0 data | +

Not secure | data.diversitydatakids.org/dataset/coi20-child-opportunity-i...

Home | Datasets | Child Opportunity Index ...

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COI 2.0 component indicators

- **Z-scores**